



**REMOVAL ACTION/FIELD
INVESTIGATION REPORT
FOR THE
SAAD TROUSDALE DRIVE SITE
NASHVILLE, TENNESSEE**

Submitted to:

**U.S. EPA, Region IV
Atlanta, Georgia**

Prepared by:

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on behalf of:

Saad Site Steering Committee

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EXECUTIVE SUMMARY

INTRODUCTION

This report addresses specific activities performed at the Saad Trousdale Drive Site (Site) in Nashville, Tennessee as part of the implementation of the Removal Action/Field Investigation Work Plan submitted to U.S. EPA in July 1991 (RA/FI Work Plan). The RA/FI Work Plan was prepared to address requirements of the Administrative Order by Consent (AOC) dated April 11, 1990. Results of the RA/FI are presented in this report along with conclusions and recommendations for future response action. This report also summarizes activities performed under the AOC during the initial phase of aboveground removal conducted from March 1990 to January 1991. A previous report submitted in July 1991 (Exploratory Trenching Report, EMPE, Inc., July 1991) detailed Site activities in March through June 1991.

The objectives of the RA/FI Work Plan were to gather data necessary to establish appropriate response levels, to evaluate response alternatives for the former settling basin area, and to conduct the second phase of the removal action to address AOC requirements that were not completed during the initial aboveground removal action.

REMOVAL ACTIVITIES

Under the RA/FI Work Plan, several activities were performed that resulted in the removal of exposed surface drums, materials remaining on-site from the initial aboveground response action, surface debris, the oil-water separator system, and drums encountered during the trenching operation. These removal activities resulted in the disposal of 8,500 gallons of liquid, 105 nonhazardous drums, 16 hazardous drums, and 100 cubic yards of debris.

Prior to implementation of the RA/FI Work Plan, an aboveground removal action was conducted to respond to the AOC requirement of aboveground tank removal. This initial response action resulted in the removal of four (4) aboveground tanks, two (2) sumps and their associated contents, along with contents of the oil/water separator (OWS) system. This initial phase of response resulted in removal of 144,700 lbs of hazardous waste that was treated via incineration by Rollins Environmental Services (Deer Park, Texas), and 16,300 gallons of nonhazardous liquids that were treated at the OSCO, Inc. facility (Columbia, Tennessee). The

aboveground equipment was decontaminated and shipped for recycling to Steiner Liff Metals, Inc. (Nashville, Tennessee).

FIELD INVESTIGATION ACTIVITIES

Pursuant to the U.S. EPA approved RA/FI Work Plan, investigation activities were conducted at the Site between August 22, 1991 and October 18, 1991 and consisted of the installation of 7 soil borings, 4 trenches, 2 test pits, and conducting a geophysical survey. Eighteen samples were collected for Target Analyte List/Target Compound List (TAL/TCL) analyses to characterize the Site. Four samples were obtained for geotechnical analyses, and nine samples were collected for disposal characterization.

The objectives of the field investigation were:

- Determine the nature and approximate boundaries of the former settling basin.
- Characterize the nature of any contamination within the settling basin.
- Determine the nature of any contamination on the Site.
- Determine lithologies and geotechnical characteristics of Site soils.

The soil boring and trenching investigation with the associated sampling program have defined the subsurface conditions and materials and preliminarily characterized the nature and extent of Site-related compounds. An analysis and review of historic aerial photographs was conducted in conjunction with the field investigation.

ANALYTICAL RESULTS

Eighteen subsurface soil samples were collected and analyzed for TAL/TCL parameters from the 0.4-acre Site. An additional nine samples were collected for characterization and disposal of surface debris, and five samples were collected from drummed materials encountered during trenching operations.

An analysis of soil data indicates that some volatiles, semivolatiles, and metals are present. A total of nine compounds were detected above Target Response Levels (TRLs) in at least one sample. The compounds detected at the Site that occur at the greatest frequency above TRLs include ethylbenzene, toluene, xylene and trichloroethene. Ethylbenzene was detected above TRL in 3/18 samples, toluene in 3/18 samples, xylene in 4/18 samples, and

trichloroethene in 3/18 samples. The maximum and second highest concentrations for these compounds are the following: ethylbenzene (280/98 ppm), toluene (4100/1200 ppm), xylene (990/330 ppm), and trichloroethene (650/150 ppm). These compounds are not unusual for a waste oil recycling facility. Cadmium, lead, and PCB 1248 were detected in single sample locations where their concentrations were above TRLs.

RESPONSE ALTERNATIVE ANALYSIS

Site-specific response action objectives have been developed to:

- Reduce potential risk associated with dermal contact and/or ingestion of Site soils.
- Reduce or eliminate potential impact of contaminated soils on groundwater.

Target response levels (TRLs) were established based on these objectives and evaluation of potential legally Applicable or Relevant and Appropriate Requirements (ARARs). The appropriate target response levels were identified as the proposed Tennessee Industrial Soil Cleanup Levels.

Upon establishment of TRLs, potential response alternatives have been evaluated based on their effectiveness to achieve the TRLs and response objectives, implementability, and cost. Cost is only a balancing criteria and is not used to reject technical response alternatives. As required by the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), effectiveness relates to reduction of toxicity, mobility, or volume of contaminants and a preference for treatment is considered. The no action alternative is retained as a baseline for comparison purposes. A total of seven alternatives involving containment, treatment, removal (off-site disposal), or combinations thereof have been evaluated.

The potential impact of stormwater runoff or flooding problems in the area is addressed.

CONCLUSIONS

All Site activities were conducted pursuant to and in compliance with the terms of the April 11, 1990 AOC with the approval and oversight of U.S. EPA and consistent with the NCP. Based on evaluation of the data obtained, the following significant conclusions were made:

- Removal activities conducted have resulted in significant reduction and/or elimination of toxicity, mobility, and volume of hazardous substances. All

surface and subsurface debris and material that triggered the initial CERCLA response action have been removed.

- The former settling basin on the southwest corner of the Saad Trousdale Drive Site is not a geologic sinkhole.
- The Site does not significantly contribute to area stormwater runoff or flooding problems.
- Based on current data, soil contaminants appear to be limited primarily to ethylbenzene, toluene, xylene and trichloroethene. The detection of these contaminants above target response levels is limited to four samples, all located on the southwest portion of the Site.

RECOMMENDATIONS

Recommendations of the RA/FI Report include the following:

- Collect additional characterization data through trenching to further identify and delineate Site constituents of concern along the north, south, and western portions of the Site and in those areas where cadmium, lead, and PCB 1248 were detected in single samples above the TRLs.
- Conduct a drum search at the Site in conjunction with the additional Site characterization.
- Retain soil vapor extraction (SVE) as a response action alternative to address Site vadose zone soils. Based on the results of the additional characterization study, further evaluate and define the need to excavate portions of the Site to address metals and PCBs, and further evaluate the efficacy of SVE. Subsequent to the additional characterization study, a SVE pilot test may be performed to demonstrate the efficacy of this technology.
- Incorporate RA/FI data with the additional Site characterization study and potential SVE pilot test to evaluate and select a response action alternative or combination of alternatives that is appropriate for this Site and the level of potential risk it poses to human health and the environment.

1.0 INTRODUCTION

The purpose of this Removal Action/Field Investigation (RA/FI) report is to document all Site-specific removal and investigation activities performed at the Saad Trousdale Drive Site (Site) in Nashville, Tennessee (Figure 1-1). All Site activities were performed pursuant to and in conformance with the requirements of the U.S. EPA, April 11, 1990 Administrative Order by Consent (AOC) and the U.S. EPA approved RA/FI Work Plan (EMPE, July 1991). The AOC identified specific activities to be performed by the Saad Site Steering Committee. Specific AOC requirements included:

- Overpack and dispose of the exposed on-site drums.
- Dispose of on-site tank contents.
- Investigate a potential sinkhole at the Site that included:
 - Determination if a sinkhole exists at the Site
 - Evaluate the potential sinkhole as an active contamination source
 - Evaluate general remediation alternatives
- Submittal of a work plan to EPA that addresses the above requirements and the following tasks:
 - Review the past history of Site
 - Conduct limited sampling to determine extent of the potential sinkhole and any associated contamination
 - Submittal to U.S. EPA of a report on sinkhole-related issues with general response alternatives and cost estimates for any sinkhole area on the Site
- Evaluate necessity for redirection of stormwater runoff from the Site

In addition to addressing the specific AOC items, other Site activities were performed consistent with the AOC and under the approval of U.S. EPA to obtain additional data. This data was used to characterize and evaluate potential Site soils response alternatives.

The initial phase of the response activities conducted in accordance with the AOC and with the concurrence of U.S. EPA was performed by Ensite, Inc. between March 1990 and January 1991. These activities involved the removal and disposal of aboveground tanks and their associated contents along with contents of the oil/water separator (OWS) system. An exploratory trenching investigation was conducted March through June 1991 (Exploratory Trenching Report, EMPE, Inc., July 1991).



OAK HILL, TENN.
36086-A7-TF-024

ANTIOCH, TENN
36086-A6-TF-024

1968
PHOTOREVISED 1983
A 3656 III SE-SERIES V841

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

1968
PHOTOREVISED 1983
DMA 3656 II SW-SERIES V2

Site Location Map
SAAD Trousdale Drive Site
Nashville, Tennessee

PROJECT # 4008
SCALE: 1:24,000
FIGURE # 1-1

D R E TECHNOLOGIES
FRANKLIN, TENNESSEE

DRE Technologies, Inc. was retained by the Saad Site Steering Committee as the technical consultant and prime contractor for implementation of the RA/FI Work Plan. de maximis, inc. was retained as the project coordinator to coordinate and oversee the implementation of the RA/FI Work Plan, as well as function as the primary contact between the Saad Site Steering Committee, U.S. EPA-Region IV, and the technical consultant. Four Seasons Industrial Services, Inc. was subcontracted to DRE Technologies, Inc. to perform all field activities associated with removal, excavation, trenching, and waste disposal coordination. U.S. EPA provided approval of the RA\FI Work Plan on August 16, 1991. Project activities were performed from August 22 through October 18, 1991.

1.1 Objectives

The overall objective of the removal and investigatory activities performed at the Site was to fulfill the requirements of the AOC. The primary objective of the removal activities was to reduce or eliminate the risks associated with the direct contact pathway to any hazardous substances on the Site. The primary objective of the investigation was to collect data necessary to establish appropriate response levels and evaluate potential remedial alternatives for Site soils.

1.2 Site Background/Site History

Table 1-1 presents a summarized history of response activities performed to address the Saad Trousdale Drive Site. Figure 1-2 provides a time line chronology of these activities and events at the Site. A bibliography of Site-related documents is provided in Appendix A.

1.3 General Site Description

The Saad Site is a 0.4-acre parcel of property previously used as an oil recycling business during the 1970s and early 1980s. The Site is currently owned by Mr. and Mrs. Ellis Saad and is leased to and occupied by the LTD Body Shop, an automotive body repair shop. The Site is bounded on the north by Klein's Custom Coach Co., Inc., on the south by Franklin Brick Company, on the east by Trousdale Drive, and on the west by the CSX Railroad Radnor Yard property (see Figure 1-3, Site Diagram).

FIGURE 1-2
TIME LINE CHRONOLOGY OF EVENTS
AT THE SAAD TROUSDALE ROAD SITE
NASHVILLE, TENNESSEE

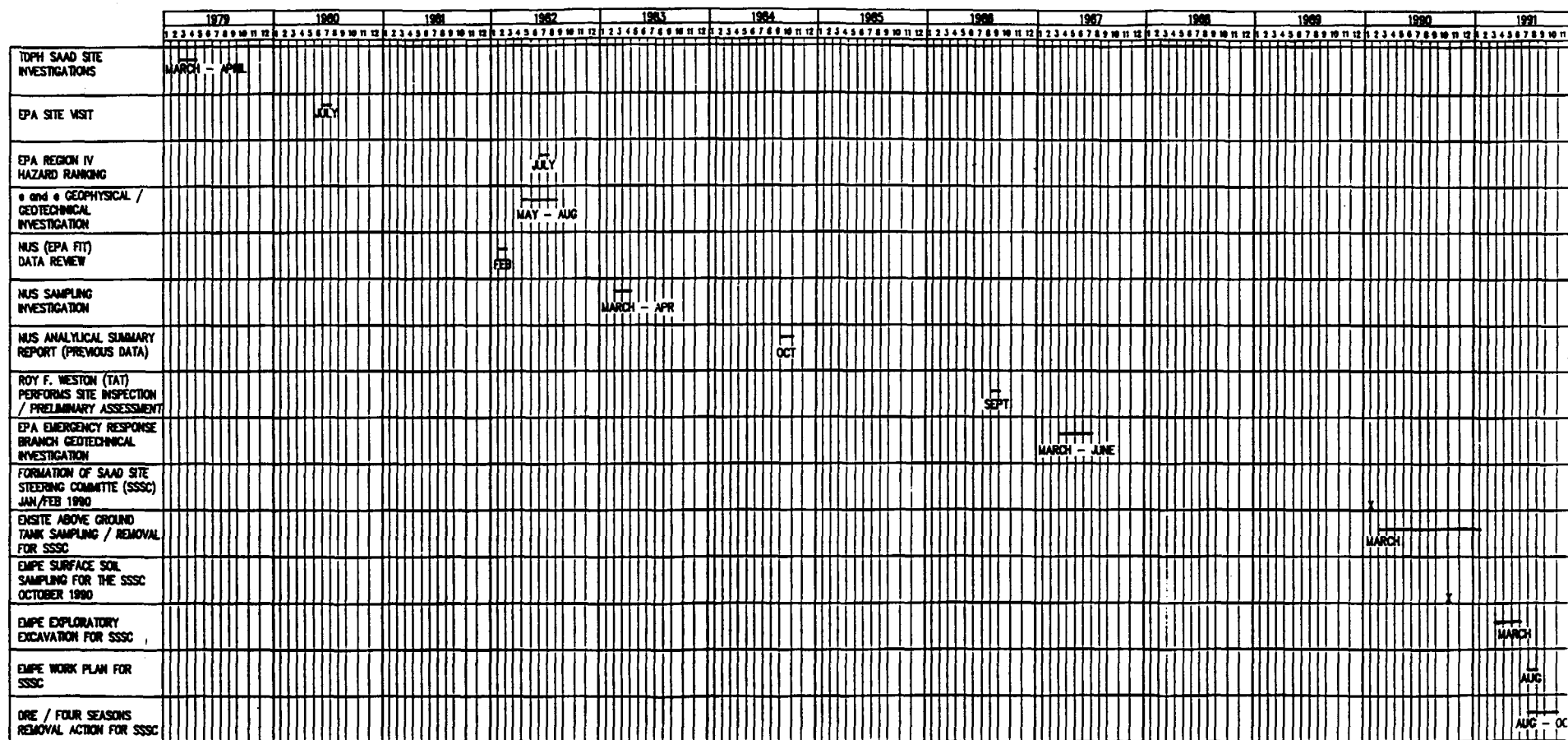


TABLE 1-1

**CHRONOLOGY OF EVENTS FOR SAAD TROUSDALE DRIVE SITE
NASHVILLE, TENNESSEE**

DATE	PERFORMED BY	ACTION
1970	John P. Saad & Sons, Inc.	Waste oil pickup service initiated.
1978	Tennessee Department of Public Health (TDPH)	Discovered depression on Saad property containing waste material.
1979	State of Tennessee	Issued Court Order to Saad's pump and backfill site depression. Depression backfilled with boulders and gravel. State unsatisfied with cleanup and suspected retrievable sludges remained.
March 1979	Tennessee Department of Public Health (TDPH)	Discovered drums suspected of containing hazardous waste present on site.
March 1980	Tennessee Department of Water Quality	Collected water samples from depression at rear of Site.
July 1980	U.S. EPA, Region IV, Environmental Emergency Response Branch (ERB)	Order issued to Mr. Saad enjoining him from bringing any liquid waste onto Site without written approval from Tennessee Department of Health and Environment (TDHE). Conducted a site visit to evaluate the need for cleanup of the area, Saad and surrounding properties, by the Federal Government. ERB determined no cleanup necessary.
July 1982	EPA Region IV	Performed a Hazard Ranking at the Site. Site scored 21.13 versus 28.0 requirement to make NPL list. Dermal contact determined to be primary risk.
May-August 1982	ecology and environment, inc. (e and e)	Acting as EPA's Field Investigation Team (FIT), conducted a geophysical and geotechnical investigation at the Site and surrounding properties to confirm prior to geophysical survey and obtain groundwater samples.

TABLE 1-1 (Cont'd)

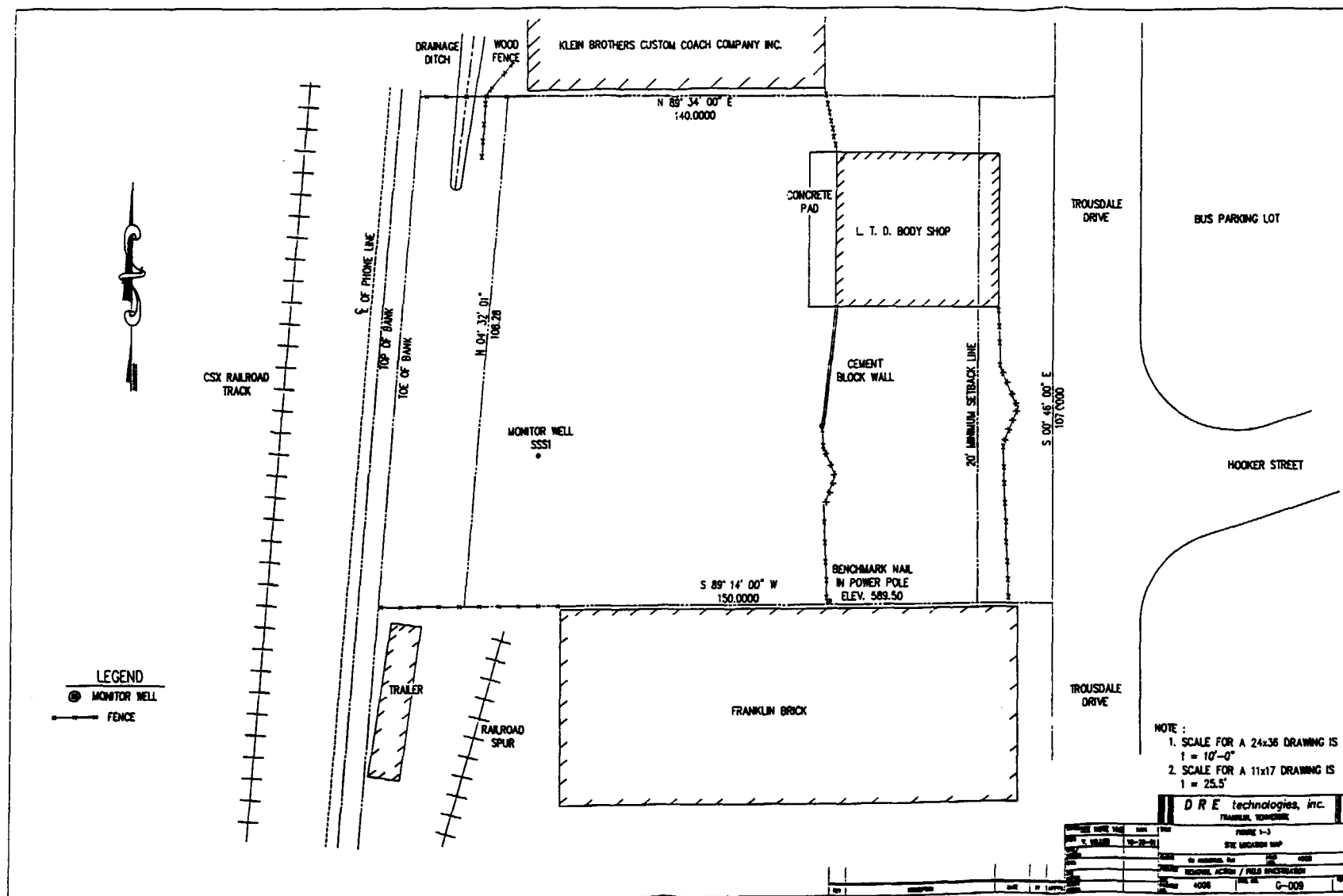
**CHRONOLOGY OF EVENTS FOR SAAD TROUSDALE DRIVE SITE
NASHVILLE, TENNESSEE**

DATE	PERFORMED BY	ACTION
Feb 1982	NUS, Inc.	Reviewed past site reports. Recommended additional investigations and a feasibility study to characterize contaminated materials in the Site depression.
April 1983	NUS, Inc.	Acting as EPA Region IV, FIT conducted sampling investigation to determine if groundwater had been impacted.
Sept 1983	NUS, Inc.	Submitted draft report summarizing prior e and e sampling events.
Sept 1986	Roy F. Weston, Inc. Public Health (TDPH)	Acting as EPA Region IV, Technical Assistance Team (TAT) conducted a Preliminary Assessment and Site Inspection (PA/SI).
March-June 1987	EPA Emergency Response Branch (ERB), Environmental Response Unit (EERU), and Contract Support Group (CSG)	Conducted an investigation to determine the type and quantity of liquids stored on site, determine the volume and extent of contaminated soil, and evaluate shallow groundwater contamination and the potential for off-site migration.
July 1989	TDHE	Commissioner's order issued to the Saad family.
November 1989	EPA, Region IV	Issued Administrative Order to Saad
January - February 1990	Saad Site Steering Committee	Formed
March 1990 - January 1991	Ensite, Inc. for the Saad Site Steering Committee	Conducted initial phase of aboveground removal under AOC. Collected bulk samples from tanks remaining on Site, treated liquids and arranged for transportation and final disposal.

TABLE 1-1 (Cont'd)

**CHRONOLOGY OF EVENTS FOR SAAD TROUSDALE DRIVE SITE
NASHVILLE, TENNESSEE**

DATE	PERFORMED BY	ACTION
April 1990	Saad Site Steering Committee	Entered into an Administrative Order by Consent (AOC) with EPA Region IV.
October 1990	EMPE, Inc. for the Saad Site Steering Committee	Collected surface soil sampling indicating presence of TPH.
March - June 1991	EMPE, Inc. for the Saad Site Steering Committee	Conducted a trenching investigation on the southwest corner of the Site to delineate the boundaries of the depression and determine whether hazardous sludges remained. All soil samples analyzed passed TCLP analysis and no discrete sludge layers were identified.
July 1991	EMPE, Inc. for the Saad Site Steering Committee	Developed a supplemental RA/FI Work Plan to complete requirements of the AOC.
August - October 1991	DRE Technologies, Inc. for the Saad Site Steering Committee	Approval of work plan by EPA on August 16, 1991. Site mobilization initiated on August 22, 1991. Site activities completed on October 18, 1991.



The Saad Site on Trousdale Drive is located at an elevation of approximately 589 feet above mean sea level and is relatively flat with less than two (2) feet elevation variation. The surface of the Site is covered with compacted fill.

1.3.1 Surface Water Hydrology. The Site is gently sloped to drain in two directions. The western portion of the Site drains toward the ditch located at the base of the steep bank below the railroad. The eastern portions of the Site drain in sheet runoff toward Trousdale Drive. A small, depressed area is located near the center of the property. During storm events, a small amount of rainwater remains standing in the center of the Site. Runoff from the Site generally appears to flow toward Seven Mile Creek.

Previous investigations and conversations with representatives of the Metropolitan Nashville-Davidson County Stormwater Department indicate that ponding and other stormwater runoff problems along Trousdale Drive have existed for many years. There is no existing stormwater drainage plan for the Trousdale Drive area.

1.3.2 Geology. The Site is located in the outer basin of the Central Basin physiographic province of Tennessee. This area is characterized by mature rolling hills that have resulted from erosion by surface waters as they drain toward the Cumberland River.

The Site is underlain by the upper Ordovician Bigby-Cannon Limestone. This limestone consists of three facies, of which the Bigby Limestone is predominant in the area of the Saad Site. The Bigby Limestone is a medium light gray to brownish-gray, coarse-grained medium bedded calcarenite. The Bigby-Cannon does weather to form sinkholes in places; however, widening of vertical joints is the more prevalent form of solution weathering of the rock. These deeply weathered joints provide ready conduits for groundwater movement downward to the underlying Hermitage Foundation. This limestone has a high phosphate content and weathers to form some of the deeper clayey soils in the area.

1.3.3 Soils. The property lies on the Maury-Urban Land-Armour area. While the surface of this Site is covered with densely compacted fill, the general area primarily consists of undulating to rolling, well-drained soils and industrial and urban land. These soils are deep

and are formed in old alluvium and the underlying residuum of phosphatic limestone.

Maury soils are on wide, gently-rolling uplands. The surface layer of Maury soil is dark brown silt loam about seven (7) inches thick. The subsoil extends to a depth of sixty-five (65) inches. The soil is brown and reddish-brown, friable silty clay loam in the upper part; reddish brown, firm silty clay in the middle part; and yellowish-red, firm silty clay in the lower part.

Armour soils generally are below Maury soils on stream terraces and foot slopes. Armour soils have a dark brown silty loam surface layer and a strong brown to yellowish-red silty clay loam subsoil.

1.3.4 Demography and Land Use. The Site is located in a highly industrial developed area of Nashville and is bounded by industrially developed property.

1.4 Report Organization

The RA/FI report is organized and presented as follows:

- 1.0 Introduction
- 2.0 Removal Activities
- 3.0 Investigation Activities
- 4.0 Subsurface Analytical Data Evaluation
- 5.0 Appropriate Response Levels
- 6.0 Analysis of Response Action Alternatives
- 7.0 Summary, Conclusions, and Recommendations

2.0 REMOVAL ACTIVITIES

2.1 Introduction

The AOC required removal and disposal of on-site tank contents and overpacking and disposal of on-site exposed drums. Removal activities were conducted in two phases, both with the approval and oversight of U.S. EPA. The initial tank removal was conducted for the Saad Site Steering Committee from March 1990 to January 1991 by Ensite, Inc. The remaining removal tasks were accomplished under the RA/FI Work Plan and included exposed drum, oil/water separator system (subsurface) and surface debris removal.

2.2 Phase 1 Removal Tasks

An initial phase of removal activities was conducted by Ensite, Inc. between March 1990 and January 1991 to meet the AOC requirements of aboveground tank removal. The Phase 1 tasks performed by Ensite included:

- Sampling and characterization of aboveground contents.
- Removal of liquids and solids from aboveground tanks and sumps.
- Disposal of tank and sump materials.

Based on the characterization of the tank contents, it was necessary to treat the liquids on-site prior to disposal. All liquids were treated by filtration through an activated charcoal-sand system before disposal at the OSCO, Inc. facility in Columbia, Tennessee. A total of 16,300 gallons of nonhazardous wastewater was disposed of at this facility during August 1990. Bills of lading are presented in Appendix B.

Sludge and other solid materials remaining in the aboveground tanks were subsequently characterized for disposal. Analyses of these materials indicated that characteristically hazardous wastes were present. All sludges and solids were drummed and shipped to Rollins Environmental Service in Deer Park, Texas for treatment. The drums contained 144,700 pounds of materials that were treated by incineration. Waste manifests are presented in Appendix B.

The tanks and associated equipment were decontaminated on-site, cut up, and removed for recycling at Steiner-Liff Metals, Inc. in Nashville, Tennessee.

2.3 RA/FI Removal Tasks

2.3.1 Mobilization. Official notification for mobilization and U.S. EPA approval to initiate activities under the RA/FI Work Plan was received on August 16, 1991. The project team personnel (de maximis, DRE, and Four Seasons) met at the Site on August 22, 1991 to confirm the execution of prerequisite mobilization tasks.

In accordance with the RA/FI Work Plan, prerequisite tasks included:

- Signed access agreements from the property owners of adjacent properties, Franklin Brick Company, CSX and Klein Coach, as well as for the Site.
- U.S. EPA written approval of the RA/FI Work Plan.
- Removal of all extraneous nonhazardous debris from the Site by Ellis Saad.
- Closure or relocation of the LTD operations.

The project team initiated mobilization without all the prerequisite tasks completed to expedite execution of the RA/FI Work Plan. The prerequisite tasks were accomplished as follows:

- Obtained temporary trailer and ancillary equipment to provide temporary headquarters for project manager and contractor personnel.
- Continued negotiations and obtained access agreement with Franklin Brick on September 16, 1991. All other access agreements had been obtained prior to mobilization.
- Relocated and removed extraneous autoshop debris during performance of RA/FI Work Plan activities.
- Installed permanent fencing to secure Site.
- Constructed a double-lined and bermed Site decontamination pad.
- Installed temporary sediment runoff barriers to prevent off-site migration of Site soils during removal and investigation activities.

A double-lined (6 mil Visqueen) and bermed decontamination pad was constructed for all future subsurface removal and investigation project activities during this project phase. A contained fluids storage area was constructed with three (3) portable polytanks with 3,500 gallons total capacity, and a portable 20,000-gallon frac tank was located on-site prior to the removal of the OWS separator system.

2.3.2 Debris Removal/Drum Characterization. Project activities associated with debris removal/drum characterization were initiated on August 26, 1991 and completed on September 6, 1991. Twenty-eight (28) drums remaining from the aboveground tank removal were consolidated, sampled, and analyzed to select the appropriate waste disposal method/facility. These drums were segregated into four (4) groups: sand, carbon, sludge, and hardened sludge. Composite samples were selected from each group for waste characterization. The results of these analyses are provided in Table 2-1. Metals, volatiles, and semivolatiles were identified in varying concentrations. The highest metals concentrations were detected in Sample SOS-03, a composite soil/sludge sample. This composite sample was collected from sludges and hoses generated by the on-site treatment of aboveground tank liquids by carbon/sand filtration during the Phase 1 removal action. This data is not indicative of soils characteristics.

Two piles of debris were segregated and disposed of during this phase of work. The debris piles contained sludge-coated materials that included personal protective equipment (PPE), plastic liner material, portable/disposable child-type swimming pools, sludge filled transfer hoses, wooden debris, auto parts, production piping sections, and monitoring well debris. All sludge-contacted materials were further segregated and drummed for off-site disposal.

Oil-stained metal and concrete debris were segregated and placed in covered, lined, twenty (20) yd³ roll offs for off-site disposal. A composite sample of this material was obtained for TCLP analysis and waste characterization. The analytical data from this sample (EDS-01) is provided in Table 2-1. Based on the analytical results, this material was disposed of as nonhazardous debris at BFI's Middlepoint Landfill.

In addition to the two piles of debris that were segregated and removed, two (2) twenty (20) yd³ roll offs were transported as clean construction debris to the Bordeaux (Davidson County) Municipal Landfill for disposal. One (1) twenty (20) yd³ roll off of pallets and wooden debris was transported to a local wood product recycle center. Waste manifests for all removal activities are compiled in Appendix B.

Sixty-one (61) drums of nonhazardous waste generated during performance of drum characterization and debris segregation were transported by Laidlaw Environmental Services to the Laidlaw Greenbrier, Tennessee facility for disposal. Included in the sixty-one (61) drums were thirty (30) drums of carbon/sand materials from the drums found on-site, thirty (30) drums

Drum Characterization
(All Concentrations in Parts Per Million (ppm))

Analytical Test	SOS-01	SOS-02	SOS-03	SOS-04
Target Analyte List (TAL)	(Solid-Carbon)	(Soils-Sand)	(Soils-Sludge)	(Solid- Hardened Sludge)
Arsenic	1.28	<1.0	10.5	<1.0
Barium	122	8.38	1745	<1.0
Cadmium	<1.0	<1.0	91.1	<1.0
Chromium, Total	5.68	2.66	907	<1.0
Selenium	<1.0	<1.0	<1.0	<1.0
Mercury	<0.20	<0.20	2.97	<0.20
Lead	15.5	20.1	7798	<1.0
Silver	<1.0	<1.0	5.19	<1.0
Copper	9.14	13.2	1235	3.68
Nickel	6.02	<1.0	305	<1.0
Zinc	216	865	6024	273
Iron	3620	831	39600	177
Manganese	69.6	9.76	456	1.94
Aluminum	2440	378	5824	<1.0
Antimony	<1.0	<1.0	16.8	<1.0
Beryllium	<1.0	<1.0	<1.0	<1.0
Calcium	5370	2920	23400	982
Cobalt	<5.0	<5.0	137	<5.0
Magnesium	1015	527	2126	111
Potassium	92.3	111	782	<1.0
Sodium	244	286	726	111
Thallium	<1.0	<1.0	<1.0	<1.0
Vanadium	<5.0	<5.0	16.1	<5.0
Cyanide	2.5	5.1	<2.0	<2.0

TABLE -1 (Cont'd)
Drum Characterization
(All Concentrations Parts Per Million (ppm))

Analytical Test	SOS-01	SOS-02	SOS-03	SOS-06	EDS-01
Target Compound List (TCL) Volatiles Method 8240	(Solid-Carbon)	(Soils-Sand)	(Solid-Sludge)	Solid-(HardenedSludge)	Solid-(SludgeComposite)
Quantitation Limit (QL)	QL = 0.62	QL = 0.010	QL = 0.63	QL = 0.010	NA
1,2-Dichloroethane	4.0	ND	ND	ND	Not Analyzed
Methylene Chloride	120	ND	28	ND	Not Analyzed
Toluene	2.3	ND	680	ND	Not Analyzed
1,2-Dichloroethylene	5.4	ND	ND	ND	Not Analyzed
Trichloroethylene	47	ND	1300	ND	Not Analyzed
Vinyl Chloride	2.1	ND	ND	ND	Not Analyzed
2-Butanone (MEK)	11	ND	2.8	ND	Not Analyzed
4-Methyl-2-Pentanone	7.8	ND	9.4	ND	Not Analyzed
Ethylbenzene	ND	ND	17	ND	Not Analyzed
Tetrachloroethylene	ND	ND	4.5	ND	Not Analyzed
1,1,1-Tri-Cl-Ethane	ND	ND	22	ND	Not Analyzed
Tri-Cl-F-Methane	ND	ND	3.8	ND	Not Analyzed
Xylene	ND	ND	220	ND	Not Analyzed
Acetone	ND	ND	9.4	ND	Not Analyzed
Chlorobenzene	ND	ND	ND	0.032	Not Analyzed
Target Compound List (TCL) Semi-Volatiles Method 8270	SOS-01	SOS-02	SOS-03	SOS-06	EDS-01
Quantitation Limit	QL = 0.82 ppm	QL = 0.33 ppm	QL = 100 ppm	QL=0.33	NA
Phenol	8.0	ND	ND	ND	Not Analyzed
Bis(2-Eth-Hex)Phthal	1.5	1.7	ND	ND	Not Analyzed
Napthalene	ND	ND	102	ND	Not Analyzed
2-Methylnapthalene	ND	ND	154	ND	Not Analyzed
TCLP Metals	SOS-01	SOS-02	SOS-03	SOS-06	EDS-01
Lead	<0.50	<0.50	0.96	<0.50	0.61

2-5

2 8 0103

Drum Characterization
 (All Concentrations in Parts Per Million (ppm))

Analytical Test	SOS-01	SOS-02	SOS-03	SOS-06	EDS-01
TCLP Volatiles Method 8240	(Solid-Carbon)	(Soils-Sand)	(Solid-Sludge)	Solid-(HardenedSludge)	Solid-(SludgeComposite)
Quantitation Limit (QL)	QL = 0.10 ppm	QL = 0.10 ppm	QL = 0.10 ppm	QL = 0.10	QL = 0.10
2-Butanone (MEK)	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethylene	ND	ND	1.2	ND	ND

of plastic-type materials and PPE from debris segregation, and one drum of hardened sludge. Manifests associated with disposal are located in Appendix B.

Eight (8) drums containing hoses/sludge generated during debris removal and segregation were identified as characteristically hazardous, Code D040, and removed for disposal at the licensed hazardous waste landfill located in Pinewood, South Carolina. Sample SOS-03 is the composite of sludge, soil, and hose material remaining from the Phase 1 removal action.

2.3.3 Exposed Drum Removal. Sixteen (16) drums exposed at the surface of the northwest corner of the Saad Site were collected and removed using a trackhoe and chain. These drums were not structurally intact and found in varying degrees of physical deformation.

A total of fifteen (15) deteriorated steel drums were collected. One fiber drum was also removed. The fiber drum had no evidence of use and was treated as construction debris for disposal. The steel drums contained minor amounts of paint and oily sludge along with some soils. Sludges appeared paint-like (*i.e.*, yellow, red, and blue in color). A composite sample, DBS-01, from the fifteen (15) drums was obtained and submitted for TCLP, volatile organics, and ancillary waste disposal analysis. This data is provided in Table 2-2. PCB 1242 was found at a concentration of 6.2 ppm. Phenols were identified at a concentration of 3.0 ppm. The chlorinated hydrocarbons, 1,2-dichloroethylene (1.9 ppm), and trichloroethylene (3.1 ppm) were detected. The TCLP data indicated that the material could be disposed of as nonhazardous materials. Due to the physical deformation of the drums, the first attempt at overpacking the drums for disposal resulted in damaged overpacks. The drums were then cold sawed and repacked in overpacks for disposal. A total of thirteen (13) overpack drums were generated for disposal. The drums were removed from the Site for disposal in early February 1992.

2.3.4 Oil/Water Separator System Removal. OWS excavation and removal activities were initiated on September 9, 1991. Previous information indicated that the OWS system consisted of two large vessels and a third smaller container located in the middle-southern portion of the Site at a depth of approximately six (6) feet. Site excavation activities discovered two (2) five (5) foot diameter cylinders. The cylinders were thirteen (13) feet in length and connected by one (1) flowthrough pipe. The third vessel's dimensions were approximately

TABLE 2-2

Analytical Results
Exposed Drum Waste Characterization
(All Concentrations Parts Per Million (ppm))

Analytical Test	DBS-01
TCLP Metals Detected	Drum Bone Material - Soils & Paint Type Sludges Composite Sample from 15 Drums
Barium	1.84
Lead	3.20
Cyanide	3.8
Sulfide	12
PCB (Solid Matrix)	DBS-01
PCB (Arochlor ID-1242)	6.2
Phenols	3.0
Volatile Organics Detected Method 8240	DBS-01
Quantitation Limit (QL)	QL = 0.62 ppm
1,2-Dichloroethylene	1.9
Trichloroethylene	3.1

twenty-two feet (22') in length and eight feet (8') in diameter. Piping was not observed between the two five-foot-diameter vessels and the third vessel. All OWS system components were found to contain liquids.

The two (2) vertical OWS vessels contained 3,200 gallons of liquids that were transferred to the on-site liquid containment system of polytanks. Liquids from the third vessel (2,200 gallons) were transferred to a tanker located on-site.

The excavated pit was roughly 30 feet by 20 feet by 13 feet deep. Efforts to keep the excavation open for a complete geologic description were not successful due to inclement weather and unstable excavated walls. A description of the northeast face of the excavation is provided in Figure 2-1.

The excavated pit contained large limestone boulders, trees, bricks, plastic, and oil-saturated sandy silty clays. Water with an oily sheen was observed in a cavity created at the interface of the limestone boulders and clay backfilled soils at approximately nine (9) feet below ground. A two (2) foot open cavity was encountered at a depth of four feet on the northeast face of the excavation, created by the random placement of limestone boulder backfill.

Two (2) liquid samples, OWS-01 and OWST-01, were obtained from the three (3) tanks and submitted for TCLP and TRPH analysis. These analytical results are provided in Table 2-3. Sample OWS-01 was a composite from the two (2) OWS tanks; sample OWST-01 was a grab sample from the flowthrough tank.

A composite OWS tanks sludge sample (OWS-SLD) was obtained after the tanks had been dewatered and placed on the decontamination pad. This sample was submitted for TCLP, BTEX, and TRPH analysis. Sample (OWS-SLD) contained a total concentration of 5.7 ppm BTEX (benzene, toluene, ethylbenzene and xylene). Total recoverable petroleum hydrocarbons (TRPH) were detected at a concentration of 7,464 ppm. Both BTEX and TRPH have been identified from past Site activities associated with waste oil operations.

Two (2) grab soil samples were taken, per RA/FI Work Plan guidelines, from the excavated pit area, OWS-PN-01 and OWS-PS-01. These samples were submitted for TAL/TCL analysis. These analytical results are provided in Table 2-4. Evaluation of these results is found in Section 4.0, Subsurface Analytical Data Evaluation.

The excavation was immediately backfilled with excavated materials and an additional eighty (80) yd³ of off-site fill material. A plastic liner marker was placed along the southern and

FEET BELOW
GROUND LEVEL

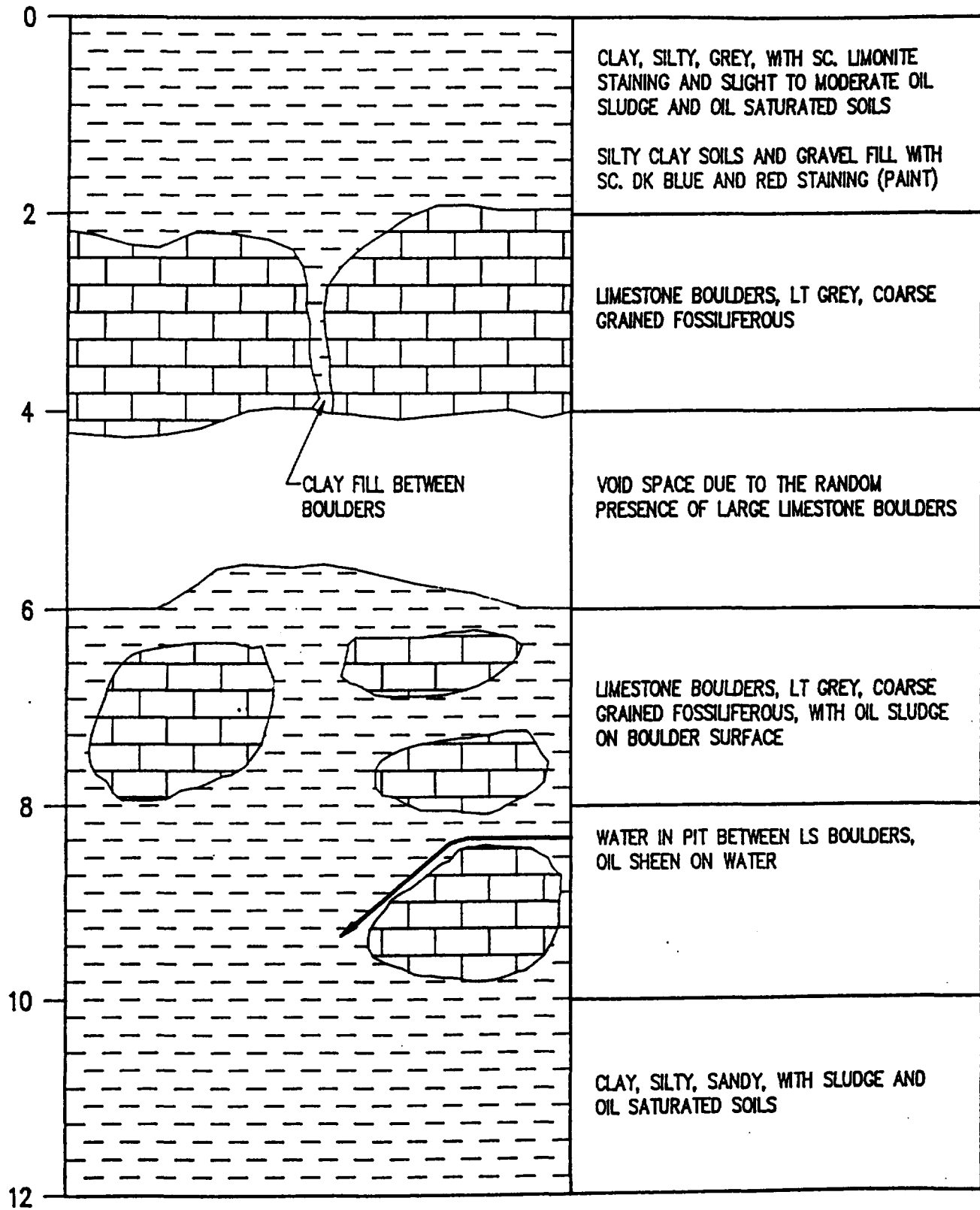


FIGURE 2-1
SCHEMATIC - NORTHEAST FACE
OIL WATER SEPARATOR PIT EXCAVATION

PROJECT # 4008
SCALE: NONE
FIG/DWG # G-004

D R E TECHNOLOGIES
FRANKLIN, TENNESSEE

TABLE 2-3

Analytical Results
Oil/Water Separator
Tank Liquid & Sludges
(All Concentrations in Parts Per Million (ppm))

ANALYTICAL TEST	OWS-PN-01	OWST-01	OWS-SLD
TCLP Metals	Water from Oil/Water Separator	Water from OWS Tank	Sludge from OWS Tank
Arsenic	<0.10	<0.10	<0.10
Barium	<1.0	<1.0	<1.0
Cadmium	<0.10	<0.10	<0.10
Chromium, Total	<0.50	<0.50	<0.50
Lead	<0.50	<0.50	<0.50
Mercury	<0.010	<0.010	<0.010
Selenium	<0.10	<0.10	<0.10
Silver	<0.10	<0.10	<0.10
TCLP Volatiles Detected Method 8240	OWS-PN-01	OWS-PS-01	OWS-SLD
Quantitation Limit (QL)	QL = 0.10 ppm	QL = 0.10 ppm	QL = 0.10 ppm
2-Butanone (MEK)	<1.0	<1.0	<1.0
Chloroform	0.15	ND	ND
BTEX (Soil) Method 8020	OWS-PN-01	OWS-PS-01	OWS-SLD
Quantitation Limit (QL)	QL = 1.0 ppm	QL = 1.0 ppm	QL = 1.0 ppm
Toluene	NA	NA	2.8
Ethylbenzene	NA	NA	1.8
Xylene	NA	NA	1.1
TRPH (Soil) Method 9071/418.1	OWS-PN-01	OWS-PS-01	OWS-SLD
Quantitation Limit (QL)	QL = 10 ppm	QL = 10 ppm	QL = 10 ppm
TRPH	NA	NA	7464

NA = Not Analyzed

northern faces of the pit to the bottom of the excavation pit to delineate the depth for future excavation activities prior to backfilling. At the final surface elevation, no compaction other than that performed by the trackhoe bucket was performed. The area was barricaded to prevent equipment from traveling through the unsettled area.

The oil water separator system vessels were decontaminated and cut as necessary for disposal at a local metal recycler, Steiner-Liff Metals, Inc. All waters were determined to be nonhazardous and were transported to Tricil for treatment and disposal. Three (3) drums containing sludges from the oil/water separator were removed from the Site for disposal in early February 1992.

2.4 Summary

Removal activities accomplished the following:

- All tanks, tank contents, and associated equipment have been removed for recycle or disposal.
- Tank content removal generated 144,700 lbs of characteristically hazardous waste that was treated via incineration at the Rollins Environmental Services facility in Deer Park, Texas. Tank content removal also generated 16,300 gallons of nonhazardous liquids that were treated at the OSCO, Inc. facility in Columbia, Tennessee.
- The Site was cleared of surface debris.
- Sixty-one (61) drums of nonhazardous waste were generated during performance of drum characterization and debris segregation. Laidlaw Environmental Services transported the drums to Laidlaw's Greenbrier, Tennessee facility for disposal.
- Eight (8) drums containing hoses and sludges generated during debris removal and segregation have been identified as characteristically hazardous waste, D040, and transported to a licensed hazardous waste landfill in Pinewood, South Carolina.
- Sixteen (16) drums exposed at the surface of the northwest corner of the Saad Site were removed and collected. These drums were sampled and overpacked, resulting in thirteen (13) overpacked drums requiring disposal as nonhazardous

TABLE 2-4

Analytical Results Soil Samples Collected From Oil/Water Separator Pit Excavation
(All Concentrations in ppm)

ANALYTICAL TEST	OWS-PN-01	OWS-PS-01
Target Analyte List (TAL)	Sample from N-wall of OWS Excavation - 8' BGL	Soil Sample from S-wall of OWS Excavation - 10' BGL
Arsenic	6.02	26.9
Barium	261	298
Cadmium	<1.0	1.84
Chromium, Total	25.2	47.3
Selenium	<1.0	<1.0
Mercury	<0.10	<0.10
Lead	25.7	790
Silver	<1.0	<1.0
Copper	14.0	83.3
Nickel	16.0	31.7
Zinc	49.1	190
Iron	19845	31500
Manganese	1908	583
Aluminum	19095	21720
Antimony	<1.0	6.35
Beryllium	1.26	1.30
Calcium	14761	55080
Cobalt	13.1	12.8
Magnesium	1290	3420
Potassium	1780	2332
Sodium	304	218
Thallium	<1.0	<1.0
Vanadium	30.9	32.5
Cyanide	<2.0	2.3

TABLE 2-4 (Cont'd)

Analytical Results Soil Samples Collected From Oil/Water Separator Pit Excavation
(All Concentrations in ppm)

ANALYTICAL TEST	OWS-PN-01	OWS-PS-01
Target Compound List (TCL) Volatiles Detected Method 8240	Soil Sample from N-wall of OWS Excavation - 8' BGL	Soil Sample from S-wall of OWS Excavation 10' BGL
Quantitation Limit (QL)	QL = 0.62 ppm	QL = 0.62 ppm
Ethylbenzene	1.8	1.9
Toluene	22	13
1,2-Dichloroethylene	15	ND
Xylene	10	10
Tri-Chloro-methane	ND	3.3
Target Compound List (TCL) Semi-Volatiles Method 8270	OWS-PN-01	OWS-PS-01
Quantitation Limit (QL)	QL = 3.1 ppm	QL = 3.1 ppm
2-Methylnaphthalene	4.3	ND
Target Compound List (TCL) Method 8080	OWS-PN-01	OWS-PS-01
Quantitation Limit (QL)	QL = <0.5 ppm	QL = <0.5 ppm
PCB 1248	ND	437

ND = Not Detected

BGL = Below Ground Level

waste. These overpacked drums were removed from the Site for disposal in February 1992.

- The OWS system was excavated and removed. The OWS system was decontaminated and cut up on-site for recycling at Steiner-Liff Metals, Inc. in Nashville, Tennessee. A total of 5,400 gallons of liquid was collected and determined to be nonhazardous and transported to Tricil in Nashville, Tennessee for treatment and disposal as nonhazardous waste. Three (3) drums containing sludges from the OWS system were removed from the Site for disposal in February 1992.

3.0 INVESTIGATION ACTIVITIES

RA/FI investigation activities consisted of trenching, soil boring and a geophysical survey. Four (4) trenches were excavated along the western edge of the Saad and Franklin Brick properties. Seven (7) soil borings were performed, three (3) on Franklin Brick and four (4) on the Site. Trenching and boring locations are depicted in Figure 3-1. An electromagnetic survey was conducted on the Site in an effort to detect subsurface anomalies. The geophysical report is presented in Appendix C.

Historical aerial photographs and U.S.G.S. topographic maps were examined to estimate the limits of a depression referred to as a "sinkhole" in the AOC.

3.1 Trenching Investigations

3.1.1 Objectives. The two primary objectives of the trenching investigation were:

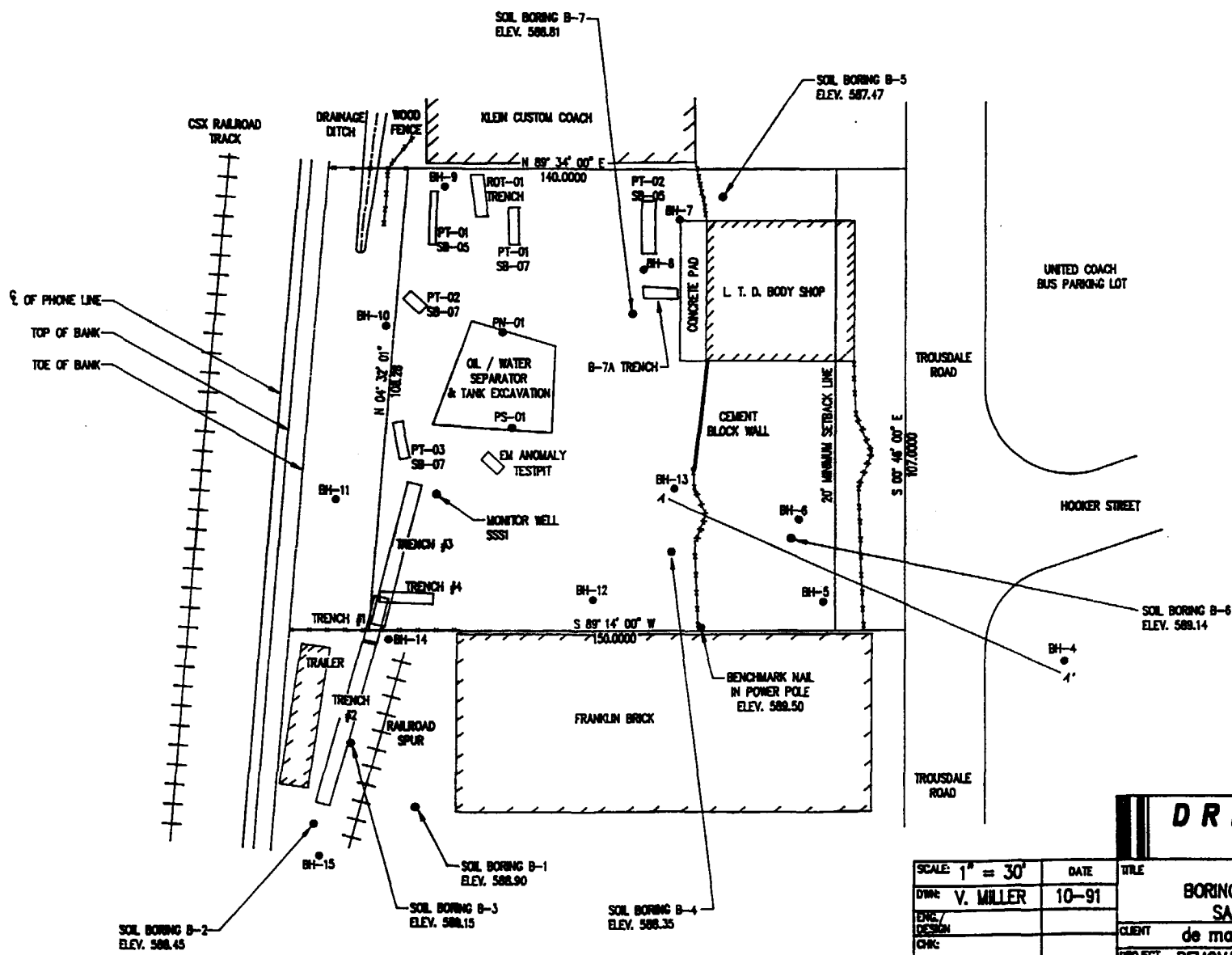
- Delineation of the nature and extent of the settling basin or "sinkhole."
- Characterization of the nature and extent of contamination in the area of the settling basin or "sinkhole."

Two (2) trenches were proposed in the approved RA/FI Work Plan. These two trenches were to be excavated at the rear of the Franklin Brick property to define the extent of the basin. Due to the unanticipated discovery of a cement type barrier and buried drums, a total of four (4) trenches were excavated during the project. Trench locations are depicted in Figure 3-1, Boring and Trench Location Map. Trenches 1 through 3 were advanced approximately 100 linear feet, extending from the southwestern edge of the Franklin Brick Building north toward Monitor Well SSS-1. Trench 4 was excavated perpendicular (west to east) to Trench 3 for approximately 14 feet, adjacent to the Franklin Brick Building, to investigate potential buried drum locations. Trenching operations began on September 17, 1991 and were completed on September 23, 1991.

3.2 Trenching and Sampling Methods

A trackhoe with a twenty (20) foot depth limitation and a backhoe with a twelve (12) foot limitation were used to excavate the trenches. Sample locations were chosen to obtain a cross section of soil types typical of the Site and to define subsurface conditions. Due to the instability of the trench walls and excavation depths, safety protocol required that samples be

28 0115



- LEGEND**
- SOIL BORING / DRE
 - MUS SOIL BORINGS (COMPLETED 1987)
 - TRENCH OR PRE TRENCH (PT)
 - A - A' CROSS SECTION LOCATION

DRE technologies, inc.
FRANKLIN, TENNESSEE

FIGURE 3-1
BORING AND TRENCH LOCATION MAP
SAAD TROUSDALE ROAD SITE

SCALE: 1" = 30'	DATE
DRAWN: V. MILLER	10-91
ENG. / DESIGN	
CHECK	
DRE	
APPROV. CLIENT	

CLIENT	de maximis, inc.	PROJECT NO.	
PROJECT	REMOVAL ACTION / FIELD INVESTIGATION		
DRE PROJECT NO.	4008	DWG. NO.	G-001

REV	DESCRIPTION	DATE	BY	APPROV.

obtained from the center of the excavation equipment bucket or from soils transferred to a lined soils containment area adjacent to the trench.

3.3 Trench Descriptions

3.3.1 Trench No. 1. Trench 1 was located approximately ten (10) feet north of the southwest corner of the Site and was advanced fifteen (15) feet to the south onto the Franklin Brick property as depicted in Figure 3-1. Figures 3-2 and 3-3 are cross sections of Trenches 2 and 3, respectively, and describe the subsurface conditions encountered in Trench 1 because of trench overlap. Gravel was encountered in the upper one (1) foot and graded into dark gray, oil-saturated, sandy, silty, clay backfill, limestone boulders, and varying amounts of debris such as timbers and bricks to approximately nine (9) feet below ground. Stained layers, ranging from a few inches to approximately one (1) foot thick, were encountered randomly from four (4) feet to thirteen (13) feet below ground. A concrete layer, termed the "concrete pad" for this investigation, approximately 1.5 feet thick, was exposed nine (9) feet below ground and traced throughout the length of the excavation.

Trench 1 was excavated to a maximum depth of twenty (20) feet below ground. The "concrete pad" was inadvertently penetrated during this excavation. Soils beneath the "concrete pad" consisted of dark gray to black, oil-stained, sandy, silty clays.

Two (2) water zones with oily sheens were encountered at approximately four (4) feet below ground as illustrated on the cross sections. In accordance with an approved amendment to the RA/FI Work Plan, the water that entered the trench was pumped to a frac tank. The water in the frac tank was sampled and determined to be nonhazardous. Frac tank liquids were disposed of at Tricil. Manifests are included in Appendix B. Both zones were developed along the interface of soil backfill and limestone boulders.

Six (6) grab samples were taken at various depths and are described in Table 3-1. Two (2) samples, T1-S4 and T1-S6, were submitted to the laboratory for TAL/TCL analysis. Laboratory results are summarized in Table 3-2. The samples taken for visual classification and screening and not submitted for analysis were drummed for proper disposal.



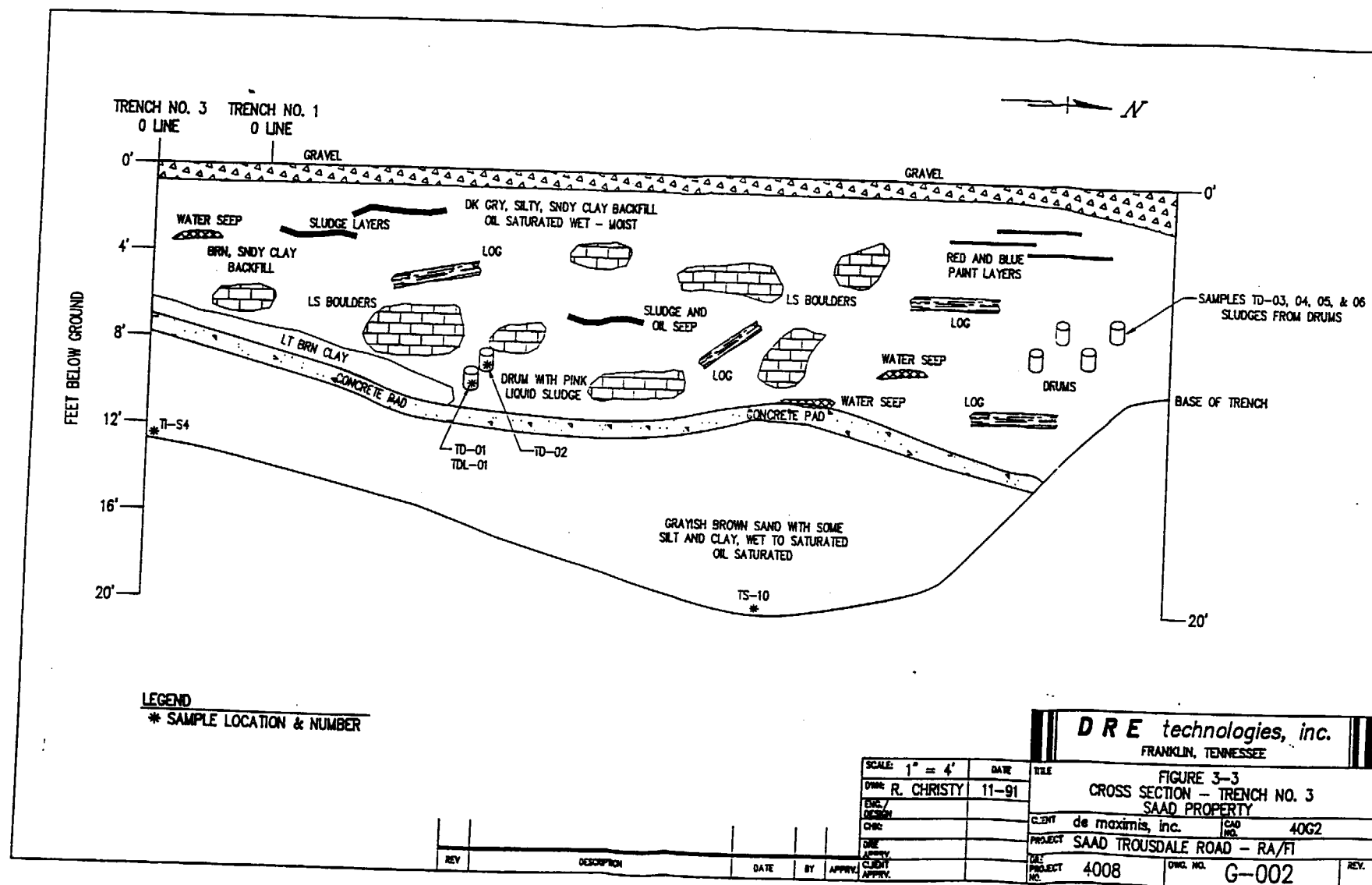


TABLE 3-1

TRENCH SOIL SAMPLE DESCRIPTION

SAMPLE NO.	DEPTH BELOW GROUND	DESCRIPTION	LABORATORY ANALYSIS	PID
T1-S1	8-9'	Clay, sandy, medium brown, with hydrocarbon staining, wet	NA	506 ppm
T1-S2	9-10.5'	Cement with sand and pebbles	NA	
T1-S3	10.5-13'	Clay, sandy backfill, black, oil saturated. Very strong odor	NA	2200 ppm
T1-S4	13'	Black sludge, sandy oil saturated, very strong petroleum odor	TAL/TCL	
T1-S5	18'	Sludge, sandy, black, oil saturated, very strong petroleum odor		
T1-S6	20'	Clay, sandy, medium brown, w/oil staining, wet, high plasticity	TAL/TCL	
T2-S1	GRAB	Clay, black, sandy and gravel, w/oil saturation and ink product	NA	
T2-S2	8'	Clay, black, sandy and sludge w/trace gravel	TAL/TCL	185 ppm
T2-S3	5'	Clay, sandy, medium brown, w/trace petroleum products	TAL/TCL	
TS-10 (Trench 3)	20'	Sand, grayish brown, w/some silt and clay, wet to saturated	TAL/TCL	132 ppm (Headspace)
TDL-01 (Trench 3)	8'	Reddish pink liquid	TAL/TCL	
TD-1 (Trench Drum)	8'	Reddish pink liquid & sandy clay backfill		
TDL-02 (Trench Drum)	8'	Purple sludge and sandy clay backfill		450 ppm
TD-03 (Trench Drum)	8'	Black, viscous sludge	TAL/TCL	
TD-04 (Trench Drum)	8'	Black sludge & black liquid, sandy clay backfill soils	TAL/TCL	
TD-05 (Trench Drum)	8'	Black, sandy clay backfill w/gravel, medium viscosity, sludge	TAL/TCL	
TD-06 (Trench Drum)	8'	Black sandy clay backfill, w/gravel, red-dried paint, black sludge, medium viscosity	TAL/TCL	
T4-S1	8'	Sandy clay soil, black sludge and some gravel	TAL/TAC	44

3-6

TABLE 3-2

TRENCH SOIL SAMPLE ANALYSES
SOIL SAMPLES COLLECTED FROM TRENCHES #1, 2, 3, 4
(All Concentrations Parts Per Million (ppm))

Analytical Test	T1-S4	T1-S6	T2-S3	T2-S2	TS-10	T4-S1
Target Analyte List (TAL)	Soil from 13' BGL Trench #1	Soil from 20' BGL Trench #1	Soil from 5' BGL Trench #2	Soil from 8' BGL Trench #2	Soil from 20' BGL Trench #3	Soil from 8' BGL Trench #4
Arsenic	6.19	3.29	3.83	4.56	4.16	4.24
Barium	226	185	181	93.4	252	111
Cadmium	26.6	<1.0	<1.0	<1.0	<1.0	4.16
Chromium, Total	123	20.4	11.7	21.7	14.9	2.98
Selenium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Lead	305	29.4	20.6	48.9	21.3	52.3
Silver	1.87	<1.0	<1.0	<1.0	<1.0	4.54
Copper	166	10.3	8.40	20.8	10.9	26.8
Nickel	75.3	15.8	19.3	14.3	17.6	14.7
Zinc	737	51.2	54.8	70.9	52.9	78.1
Iron	15177	14147	18908	16318	18866	11056
Manganese	378	1333	381	578	813	639
Aluminum	13398	15898	21346	9420	22500	10306
Antimony	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Beryllium	1.20	1.22	1.44	<1.0	1.28	<1.0
Calcium	70252	6161	59154	56300	13474	102400
Cobalt	12.7	10.6	10.7	7.88	10.8	<10.0
Magnesium	4454	1185	7948	2788	1570	5214
Potassium	1821	1805	1683	1229	2520	1238
Sodium	438	706	143	343	256	301
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	21.7	23.7	23.7	19.3	30.5	17.8
Cyanide	9.3	2.3	<2.0	<2.0	<2.0	<2.0

TABLE 3-2 (Cont'd)

TRENCH SOIL SAMPLE ANALYSES
SOIL SAMPLES COLLECTED FROM TRENCHES 1, 2, 3, 4
 (All Concentrations Parts Per Million (ppm))

Analytical Test	T1-S4	T1-S6	T2-S3	T2-S2	TS-10	T4-S1
Target Compound List (TCL) Method 8240	Trench 1 Soil from 13' BGL	Trench 1 Soil from 20' BGL	Trench 2 Soil from 5' BGL	Trench 2 Soil from 8' BGL	Trench 3 Soil from 20' BGL	Trench 4 Soil from 8' BGL
Quantitation Limit (QL)	QL = 13 ppm	QL = 1.3 ppm	QL = 0.010 ppm	QL = 0.63 ppm	QL = 0.63 ppm	QL = 12 ppm
Ethylbenzene	98	1.5	ND	280	16	68
Toluene	1200	12	0.074	4100	21	640
Xylene	320	6.3	0.058	990	40	260
1,2-Dichloroethylene	ND	ND	0.040	890	ND	ND
Trichloroethylene	650	27	0.072	150	ND	ND
Acetone	170	ND	0.031	ND	ND	ND
Tetrachloroethylene	ND	4.0	ND	ND	ND	ND
Phenol	6.6	8.1	ND	ND	ND	ND
Naphthalene	16.5	ND	ND	ND	3.0	ND
2-Methylnaphthalene	9.9	ND	ND	ND	4.3	ND
2,4-Dimethylphenol	ND	29	ND	ND	5.3	ND
2-Methylphenol	ND	0.92	ND	ND	ND	ND
4-Methylphenol	ND	14	ND	ND	ND	ND
CLP Extractables Detected Method 8080	Trench 1 Soil from 13' BGL	Trench 1 Soil from 20' BGL	Trench 2 Soil from 5' BGL	Trench 2 Soil from 8' BGL	Trench 3 Soil from 20' BGL	Trench 4 Soil from 8' BGL
Quantitation Limit (QL)	QL = <0.5 ppm	QL = <0.5 ppm	QL = <0.5 ppm	QL = <0.5 ppm	QL = <0.5 ppm	QL = <0.5 ppm
PCB 1242	ND	ND	ND	ND	0.84	1.7

ND = NOT DETECTED

BGL = Below Ground Level

3.3.2 Trench No. 2. Trench 2 originated at the southeast corner of the trailer on the Franklin Brick property and was advanced forty-eight (48) feet north-northeast as presented in Figure 3-1.

Figure 3-2 is a cross section illustrating the subsurface conditions identified during the trench excavation. The "concrete pad" was exposed one (1) foot below ground at the origination point (0 Line) and was traced throughout the length of the trench. The concrete pad was not penetrated. Trench 2 was carefully excavated to delineate the extent of the "concrete pad." The upper twelve (12) to eighteen (18) inches was gravel. Below the gravel layer, the material consisted of dark gray, sandy, silty, oil-stained, clay backfill, large limestone boulders covered with oil residue, timbers and bricks to a maximum excavation depth of approximately ten (10) feet.

Three (3) water zones with associated oil sheens were encountered. The first two (2) were twenty-four (24) feet north of the 0 Line, five (5) and seven (7) feet below ground, respectively. Both were developed along a limestone boulder and soil interface. The third zone was 38.5 feet from the 0 Line, seven (7) feet below ground immediately above the "concrete pad." Water that entered the trench was pumped into the frac tank. Frac tank liquids tested nonhazardous and were disposed of at Tricil.

Three (3) soil samples were collected from this trench and are described in Table 3-1. Two (2) samples, T2-S2 and T2-S3, were submitted for laboratory analysis. These analytical results are provided in Table 3-2. Sample T2-SS1 was drummed for future disposal.

3.3.3 Trench No. 3. Trench 3 was excavated in a northerly direction beginning at the Franklin Brick - Saad property line and advanced forty-six (46) feet toward MW-SSS-1 on the Site as depicted in Figure 3-1. Maximum depth of excavation was twenty (20) feet.

Figure 3-3 is a cross section of Trench 3 that illustrates the materials exposed. The "concrete pad" was traced for forty (40) feet from the trench origination point and ranged from 7.5 to 13.5 feet below ground and averaged 1.5 feet in thickness. The materials above the pad were similar to those exposed in Trench 2, *i.e.*, dark gray, oil-stained and/or saturated, sandy, silty clay backfill, large limestone boulders with oil residue, tree trunks, and minor amounts of brick and gravel. Sludge-type materials and dried paint layers were scattered throughout the

upper ten (10) feet. Below the "concrete pad," the material was primarily wet to saturated grayish-brown, sand, silt and clay. Sample TS-10 was collected at twenty (20) feet below ground and is described in Table 3-1. Analytical results are summarized in Table 3-2. Two (2) small water seeps were encountered at thirty (30) feet north of the 0 Line, ten (10) feet below ground, and thirty-four (34) feet north of the 0 Line, nine (9) feet below ground.

Buried drums were encountered during the excavation of Trench 3. The drum locations are illustrated on the cross section, Figure 3-3. The first drum was encountered eight (8) feet below ground, fourteen (14) feet north of the 0 Line, and contained a reddish-pink liquid. The drum was retrieved and sampled. A sample of the liquid, TDL-01, and a sample of the soil and sludge, TD-01, were collected from the drum. After the sampling was accomplished, the drum was overpacked for future disposal. Trenching continued, and a second drum, TD-02, which contained a purple sludge, was encountered. The second drum was excavated, materials sampled, and overpacked for future disposal.

Four (4) drums were discovered approximately forty-three (43) feet north of the 0 Line, eight (8) feet below ground. The 4 drums were excavated and the contents and associated soils sampled. These 4 drums and the associated samples were labeled TD-03 through TD-06. Sample descriptions are detailed in Table 3-1, and analytical data is summarized in Table 3-3. All drums were overpacked for future disposal at an approved facility.

All drums encountered during exploratory trenching were deteriorated in varying extent. During removal of the drums, elevated concentrations of organic vapors in the breathing zone were recorded. In order to remove these drums safely, personal protective equipment was upgraded. As expected with deteriorated drums, only minimal quantities of liquid remained in the drums. It could not be ascertained if the minor quantities of liquids were a result of surface water recharge ingress, or if these liquids represented the original remaining contents of the drums. Removal of drums in this condition presented a significant risk of release and exposure.

3.3.4 Trench 4. Trench 4 was excavated perpendicular (west to east) to Trench 3 along the northern side of the Franklin Brick Building as depicted in Figure 3-1. The trench was limited to fourteen (14) feet in length due to the presence of the frac tank and the waste drum storage area.

DRUM LIQUID & SLUDGE ANALYSES
SOIL & PRODUCT SAMPLED FROM DRUMS ENCOUNTERED DURING TRENCHING ACTIVITIES
 (All Concentrations Parts Per Million (ppm))

Analytical Test	TDL-01	TD-03	TD-04	TD-05	TD-06
Target Analyte List (TAL)	(Solid Soil/Product)	(Solid Sludge)	(Solid Sludge)	(Solid Sludge)	(Solid Sludge)
Arsenic	<10	1.42	2.06	4.52	5.38
Barium	2298	338	350	165	159
Cadmium	<10	<1.0	<1.0	<1.0	2.35
Chromium, Total	45	30.6	29.6	22.3	51.6
Selenium	<10	<1.0	<1.0	<1.0	<1.0
Mercury	<1.0	<0.10	<0.10	<0.10	<0.10
Lead	608	3142	1567	311	404
Silver	5.6	<1.0	<1.0	3.90	4.42
Copper	43	17.3	9.88	38.6	47.4
Nickel	148	4.70	5.50	16.2	16.1
Zinc	44	80.2	72.2	155	177
Iron	278	3012	4956	15452	10466
Manganese	29	50.8	52.8	769	362
Aluminum	2380	2948	3364	10414	9956
Antimony	<10	5.40	<1.0	<1.0	<1.0
Beryllium	<10	<1.0	<1.0	<1.0	<1.0
Calcium	2738	6506	6552	62240	87360
Cobalt	125	<10.0	<10.0	<10.0	<10.0
Magnesium	167	326	269	4300	3692
Potassium	1550	142	124	1029	889
Sodium	91	518	826	213	222
Thallium	ND	<1.0	<1.0	<1.0	<1.0
Vanadium	<10.0	<10.0	<10.0	17.9	16.8
Cyanide	<2.0	<2.0	<2.0	<2.0	8.1

TABLE 3-3 (Cont'd)

DRUM LIQUID & SLUDGE ANALYSES
SOIL AND PRODUCT SAMPLED FROM DRUMS ENCOUNTERED DURING TRENCHING ACTIVITIES
 (All Concentrations in Parts Per Million (ppm))

Analytical Test	TDL-01	TD-03	TD-04	TD-05	TD-06
Target Compound List (TCL) Method 8240	(Solid-Soil/Product)	(Solid-Sludge)	(Solid-Sludge)	(Solid-Sludge)	(Solid-Sludge)
Quantitation Limit (QL)	QL = 100 ppm	QL = 2.5 ppm	QL = 12 ppm	QL = 12 ppm	QL = 2.5 ppm
1,1-Dichloroethane	ND	5.3	ND	ND	3.5
Ethylbenzene	220	14	ND	ND	16
Tetrachloroethylene	860	6.3	110	190	540
Toluene	4400	140	190	63	150
1,2-Dichloroethylene	360	61	140	45	150
1,1,1-Tri-Cl-Ethane	ND	32	ND	ND	21
Trichloroethylene	460	5.8	ND	ND	88
Xylene	1160	82	45	ND	95
Vinyl Chloride	ND	14	ND	ND	ND
4-Methyl-2-Pentanone	225		ND	ND	ND
Target Compound List (TCL) Method 8270	TDL-01 (Solid-Soil/Product)	TD-03 (Solid-Sludge)	TD-04 (Solid-Sludge)	TD-05 (Solid-Sludge)	TD-06 (Solid-Sludge)
Quantitation Limit (QL)	QL = 500 ppm	QL = 500 ppm	QL = 500 ppm	QL = 17 ppm	QL = 17 ppm
BIS (2-ETH-HEX) Phthal	ND	ND	ND	ND	56
Dimethyl Phthalate	ND	ND	ND	ND	170
CLP Extractables Detected Method 9080	TDL-01 (Solid-Soil/Product)	TD-03 (Solid-Sludge)	TD-04 (Solid-Sludge)	TD-05 (Solid-Sludge)	TD-06 (Solid-Sludge)
Quantitation Limit (QL)	QL = <0.5	QL = <0.5	QL = <0.5	QL = <0.5	<0.5
PCB 1242	ND	<1.0	<1.0	1.9	2.7

3-12

28 0125

Figure 3-4 is a cross section of Trench 4 which illustrates the materials exposed. The "concrete pad" was identified eight (8) feet below ground for the first four (4) feet of the excavation and was not observed beyond that point. The soils were oil-stained with discrete stained layers identified. Limestone boulders, timbers, bricks, and steel cables were also noted. The walls of the trench were very unstable that limited the time for exposure and examination. One sample, T4-S1, was collected from the trench and submitted to Specialized Assays for analysis. T4-S1 is described in Table 3-1, and the analytical results are presented in Table 3-2.

3.4 Summary of Trenching Investigations

The trenching investigations defined the subsurface conditions on the western edge of Franklin Brick and the Site. The upper ten (10) to thirteen (13) feet typically consist of oil-stained dark gray, sandy, silty, clay backfill with large limestone boulders scattered throughout (estimated 30% by volume) with additional amounts of timbers, bricks and gravel. The "concrete pad" has been traced from the western edge of the Franklin Brick Building and continues almost to MW-SSS-1 on the Saad property. Below the "concrete pad," the soils are dark gray, moist to saturated, sandy, silty clays. Large limestone boulders and miscellaneous debris were not encountered below the concrete pad. Laboratory analyses indicate that the soils are contaminated with metals, volatiles, and semivolatiles with varying constituents and concentrations to the maximum depth of the excavations, *i.e.*, twenty (20) feet. Water in the soil overburden is present within some areas and appears along the contact between the soil and boulders.

3.5 Geologic Soil Boring Investigations

The objectives of the soil boring program defined in the approved RA/FI Work Plan were:

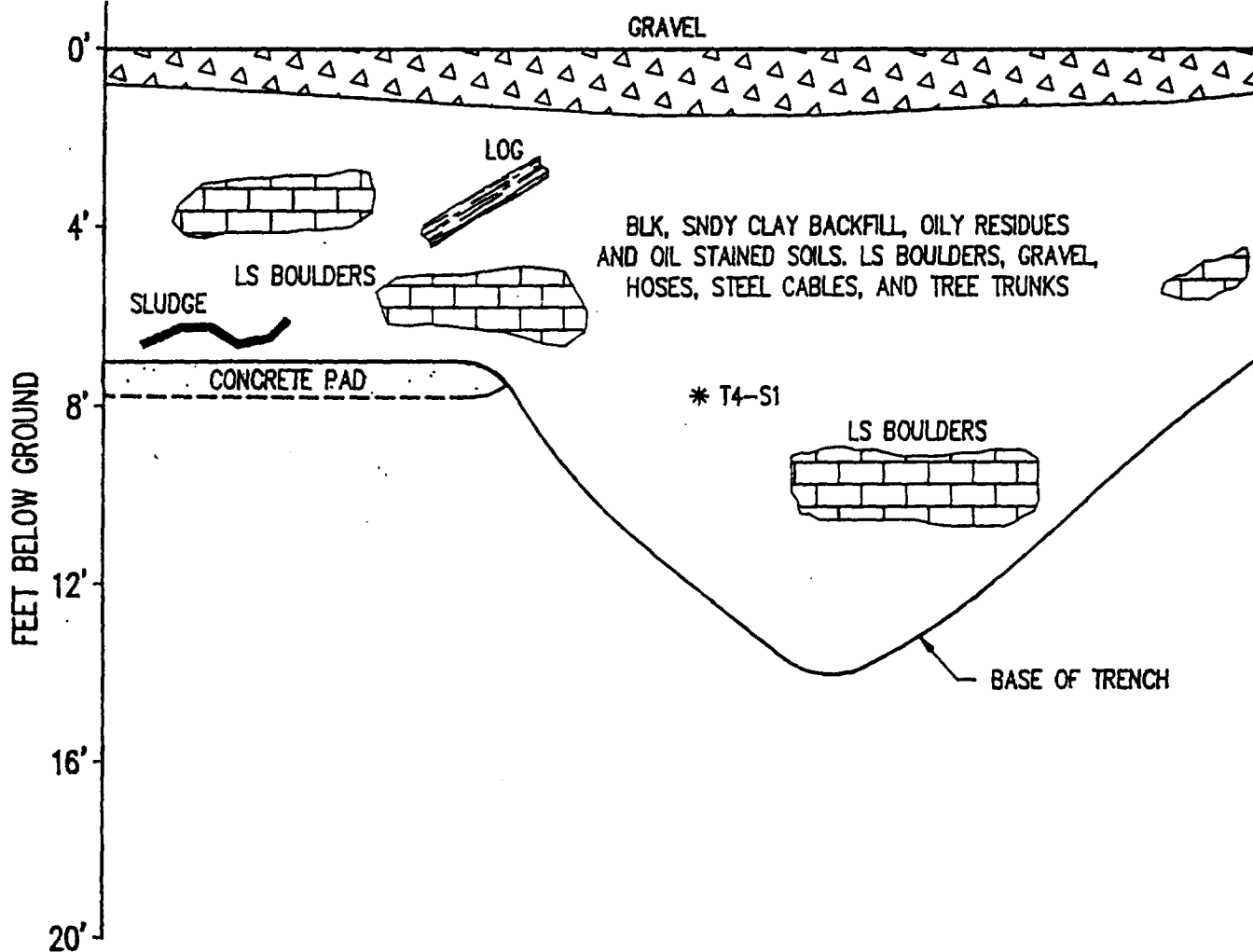
- Determine the approximate boundaries of the former settling basin.
- Characterize the nature of any contamination within the settling basin.
- Determine the nature of contamination on the Site.
- Determine lithologies and geotechnical characteristics of Site soils.

2 8 0127



W
TRENCH NO. 4
O LINE

E



LEGEND

* SAMPLE LOCATION & NUMBER

SCALE: VERT. 1" = 4'
HOR. 1" = 2'

FIGURE 3-4
CROSS SECTION - TRENCH NO. 4

PROJECT #	4008
SCALE:	
FIG/DWG #	G-006

D R E TECHNOLOGIES
FRANKLIN, TENNESSEE

Seven (7) soil borings were completed during this Site investigation. B-1 through B-3 were located on the Franklin Brick property and B-4 through B-7 on the Site as depicted in Figure 3-1, Boring and Trench Location Map.

3.5.1 Soil Boring Techniques. Conventional boring techniques using hollow stem augers and split spoon sampling could not be successfully performed on the Site due primarily to the presence of boulders that could not be penetrated with augers. In addition, the presence of buried drums exposed during trenching activities created a health and safety concern. The boring techniques and locations were adjusted to address these conditions.

A combination of augering and coring techniques were utilized in most of the borings. Borings were initiated using hollow stem augers. Where large boulders were encountered, coring was utilized to penetrate the boulders. Once the boulders were penetrated, soil sample recovery was attempted by use of split spoons, shelby tubes, or pushing the core barrel through the soils. Bedrock was confirmed in borings 1 through 5 by coring three (3) to five (5) feet upon final auger refusal. In conjunction with the modified boring techniques, a series of clearance test pits, using a backhoe and trackhoe, were excavated to clear boring locations by removing and segregating large limestone boulders and replacing the soil. The clearance excavating locations are illustrated on Figure 3-1, Boring and Trench Location Map.

Decontamination procedures were implemented throughout all drilling activities, including clearance test pits. Decontamination of the drill rig and associated tools, *i.e.*, augers, core barrels, and small hand tools, consisted of the following steps:

- Cleaned with tap water and phosphate-free detergent, brushes were used to remove particulate matter.
- Steam cleaned using tap water and phosphate-free detergent.
- Rinsed with tap water.
- Rinsed with deionized water.

Augers and associated tools were placed on clean plastic and air-dried. Split spoon samples and soil trowels were cleaned using the following steps:

- Cleaned with tap water and phosphate-free detergent. Brushes were used to remove any particulate matter.

- Rinsed with tap water.
- Rinsed with deionized water.
- Rinsed with isopropyl.
- Placed on clean plastic and air-dried.

Backhoe and trackhoe buckets were:

- Rinsed with tap water.
- Cleaned with tap water and phosphate-free detergent. Brushes were used to remove any particulate matter.
- Steam cleaned using tap water and phosphate-free detergent.

All soils generated from boring activities, with the exception of soils collected for sample and analysis, were placed on plastic during boring activities and drummed for final disposal upon boring completion. All boreholes were grouted to the surface upon completion.

3.6 Settling Basin Investigation - Soil Borings

Three borings, B-1 through B-3, depicted in Figure 3-1, Boring and Trench Location Map, were advanced on the Franklin Brick property. These borings were designed to determine the thickness of the "concrete pad," obtain lithologic soil profiles, soil samples for chemical analysis, and geotechnical samples.

The "concrete pad" was penetrated in all the borings and ranged from 4.5 to 7.5 feet in thickness. Soils below the "concrete pad" are dark gray silt, silty clay and sand. Oil staining was observed on split spoon samples and extended to the soil/bedrock contact. Borehole PID readings ranged from 5 to 547 ppm. Bedrock depths range from 21.5 to 23.8 feet below ground, indicating relatively flat bedrock. Bedrock is grey, thin-bedded stylolitic limestone. A total of six (6) samples were submitted for chemical analysis, and analytical results are summarized in Table 3-4. Three (3) Shelby tube samples were obtained for geotechnical analysis, and the results are summarized in Table 3-5. The geotechnical analysis indicates that the soils overlying the limestone bedrock are, as anticipated, silty clays with low permeability. Permeability values for these clays range from 10^{-7} to 10^{-8} cm/sec. The boring logs for B-1 through B-3 are presented in Appendix D.

TABLE 3-4

ANALYTICAL RESULTS
SOIL SAMPLES COLLECTED FROM SOIL BORINGS B-1 THROUGH B-3
ADVANCED ON THE NORTHWEST CORNER OF FRANKLIN BRICK'S PROPERTY
(All Concentrations Parts Per Million (ppm))

CLP TOTAL METALS	B-1-5 9.8-11.8'	B-1-9 18-20'	B-2-4 15.5-17.5'	B-2-6 19.5-21.5'	B-3-4 13.3-15.3'	B-3-7 17.5-19.5'
Arsenic	4.60	3.12	1.42	1.42	1.78	2.28
Barium	150	163	150	151	182	211
Cadmium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium, Total	10.5	10.3	10.0	8.70	8.90	10.1
Selenium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Mercury	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Lead	49.6	16.3	16.7	16.7	16.2	18.1
Silver	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Copper	22.0	7.72	7.06	7.14	7.60	7.94
Nickel	12.7	10.9	9.88	10.9	11.1	12.7
Zinc	48.1	45.2	42.2	42.2	33.0	71.1
Iron	14694	14892	10614	8614	11776	16152
Manganese	1231	665	323	449	1443	1196
Aluminum	13386	13990	13180	15446	11612	14064
Antimony	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Beryllium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Calcium	15420	17420	13668	43780	2616	6972
Cobalt	10.1	<10.0	<10.0	<10.0	<10.0	<10.0
Magnesium	1094	1333	1339	1150	830	1103
Potassium	1514	933	725	2152	973	949
Sodium	502	493	419	647	371	384
Thallium	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	21.8	20.8	17.4	14.3	13.7	17.1
Cyanide	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

TABLE 3-4 (Cont'd)

ANALYTICAL RESULTS
SOIL SAMPLES COLLECTED FROM SOIL BORINGS B-1 THROUGH B-3
ADVANCED ON THE NORTHWEST CORNER OF FRANKLIN BRICK'S PROPERTY

Analytical Test	B-1-5	B-1-9	B-2-4	B-2-6	B-3-4	B-3-7
CLP Volatiles Detected Method 8240	Soil Sample from 9.8'-11.8' BGL	Soil Sample from 18-20' BGL	Soil Sample from 15.5-17.5' BGL	Soil Sample from 19.5-21.5' BGL	Soil Sample from 13.3-15.3' BGL	Soil Sample from 17.5-19.5' BGL
Quantitation Limit (QL)	QL = 0.010 ppm	QL = 0.62 ppm	QL = 0.010 ppm	QL = 0.010 ppm	QL = 0.010 ppm	QL = 0.010 ppm
Toluene	0.11	26	ND	ND	0.098	0.40
2-Butanone (MEK)	0.28	ND	0.070	0.23	0.34	0.25
2-Hexanone	0.18	ND	0.032	ND	ND	ND
4-Methyl-2-Pentanone	0.052	ND	ND	ND	0.11	0.084
Acetone	ND	ND	0.082	0.070	0.18	0.18
Ethylbenzene	ND	1.5	ND	ND	0.020	0.084
Trichloroethylene	ND	ND	ND	ND	0.026	0.13
1,2-Dichloroethylene	ND	ND	ND	ND	0.022	0.12
Xylene	ND	6.1	ND	ND	0.034	0.070
CLP Extractables Detected Method 8270	B-1-5 9.8-11.8'	B-1-9 18-20'	B-2-4 15.5-17.5'	B-2-6 19.5-21.5'	B-3-4 13.3-15.3'	B-3-7 17.5-19.5'
Quantitation Limit (QL)	QL = 1.6 ppm	QL = 0.33 ppm	QL = 0.33 ppm	QL = 0.33 ppm	QL = 0.33 ppm	QL = 1.6 ppm
Benzo (A) Pyrene	1.9	ND	ND	ND	ND	ND
Benzo (K) Fluoranthene	3.9	ND	ND	ND	ND	ND
Chrysene	2.3	ND	ND	ND	ND	ND
Fluoranthene	6.2	ND	ND	ND	ND	ND
Phenanthrene	5.2	ND	ND	ND	ND	ND
Pyrene	7.8	ND	ND	ND	ND	ND
CLP Extractables Detected Method 8080	B-1-5 9.8-11.8'	B-1-9 18-20'	B-2-4 15.5-17.5'	B-2-6 19.5-21.5'	B-3-4 13.3-15.3'	B-3-7 17.5-19.5'
Quantitation Limit (QL)	QL = 0.5 ppm	QL = 0.5 ppm	QL = 0.5 ppm	QL = 0.5 ppm	QL = 0.5 ppm	QL = 0.5 ppm
All Parameters	ND	ND	ND	ND	ND	ND

ND = NOT DETECTED

TABLE 3-5

SUMMARY OF GEOTECHNICAL LABORATORY TEST RESULTS

Boring No.	Depth (ft)	Classification	Dry Unit Weight (PCF)	Moisture Content (%)	Porosity (%)	Specific Gravity	Coefficient of Permeability (cm/s)	pH	Cation Exchange (Meq/100 _s)
B-1-6	11.8-13.8	Dark grayish brown silty clay with chert	100.67	29	45.87	2.55	4.6×10^{-7}	6.12	22.6
B-2-3	13.5- 15.5	Dark grayish brown to yellowish brown silty clay	101.31	25	37.56	2.60	$1.8 \cdot 10^{-7}$	6.43	20.0
B-3-5	15.3-17.3	Grayish brown to yellowish brown silty clay with chert	95.05	30	40.19	2.55	5.7×10^{-8}	7.61	35.7
B-5-1	12.2-13.4	Yellowish brown and grayish brown silty clay	98.88	27	40.20	2.65	9.5×10^{-9}	6.03	32.2

3.7 Saad Property - Borings B-4 through B-7

Four (4) borings were advanced on the Saad Property. A total of seven (7) clearance excavations were dug to clear areas for these boring locations. Soil boring and associated clearance excavation locations are depicted in Figure 3-1. During clearance activities along the western edge of the Site and the geophysical anomaly (*i.e.*, EM Anomaly Test Pit as identified on Figure 3-1), some drum remains were encountered. These areas were excluded for potential borehole locations. Timbers and boulders were encountered in clearance excavations associated with PT-01, SB-05 and ROT-01 which eliminated those locations for drilling. Limestone boulders were nearly continuous from surface to approximately seven (7) feet below ground in PT-02, SB-05, which eliminated this site for drilling.

Soil samples recovered from the Site were dark gray, olive brown to brown, silty, sandy clays with varying amounts of oil staining as described in Boring Logs B-4 through B-7, located in Appendix D. Limestone bedrock was penetrated in borings B-4 and B-5 and assumed in boring B-7. Depth to bedrock ranged from sixteen (16) to nineteen (19) feet below ground.

A total of four (4) samples were submitted for chemical analysis. One sample, B5-S1, was submitted for geotechnical evaluation. Analytical results are summarized in Table 3-6. Geotechnical results are listed in Table 3-5.

3.8 Geotechnical Analysis

As part of the geologic investigation, soil samples were collected for geotechnical analysis. The geotechnical analyses provided lithologic and physical characteristics of Site soils. Four samples, B-1-6, B-2-3, B-3-5 and B-5-1, were submitted to Pittsburgh Testing Laboratories, Nashville, Tennessee for geotechnical soil analysis. Three samples, B-1-6, B-2-3 and B-3-5, were collected from the Franklin Brick Property, and sample B-5-1 was obtained from the Site. Analytical results are summarized in Table 3-5, and the complete geotechnical report is presented in Appendix E.

Soil samples are classified as silty clay with an average porosity of 40.9%. The average pH is 6.5, which is slightly lower than the normal of 7.0 to 7.5 for residual limestone soils. Cation exchange values ranged from 20.0 to 35.7 Meq/100 g. Permeabilities range from 1.8×10^{-7} cm/sec to 9.5×10^{-9} cm/sec, which indicate low soil permeability. It should be noted that

TABLE 3-6

ANALYTICAL RESULTS
SOIL SAMPLES COLLECTED FROM SOIL BORINGS B-4 THROUGH B-7
ADVANCED ON SAAD PROPERTY
 (All Concentrations Parts Per Million (ppm))

CLP TOTAL METALS	B-4-4 13.8-15.8'	B-5-1 11.2-16.2'	B-6-3 15.0-18.0'	B-7-1 8.0-10.0'
Arsenic	3.30	4.76	7.68	2.98
Barium	195	246	225	152
Cadmium	<1.0	<1.0	3.08	23.2
Chromium, Total	15.6	10.2	55.1	116
Selenium	<1.0	<1.0	<1.0	<1.0
Mercury	<0.10	<0.10	<0.10	<0.10
Lead	23.4	20.8	161	443
Silver	<1.0	3.12	1.60	5.72
Copper	10.4	17.4	133	143
Nickel	16.0	21.6	28.7	73.1
Zinc	39.4	60.4	274	594
Iron	20960	27880	16402	11566
Manganese	1779	1738	313	320
Aluminum	18920	27100	16224	6972
Antimony	<1.0	<1.0	<1.0	<1.0
Beryllium	1.40	2.02	<1.0	<1.0
Calcium	27400	85600	39180	31880
Cobalt	13.1	11.7	14.5	11.4
Magnesium	1401	1966	2186	2272
Potassium	1535	3174	1795	634
Sodium	503	692	252	196
Thallium	<1.0	<1.0	<1.0	<1.0
Vanadium	22.7	36.5	20.9	10.7
Cyanide	<2.0	<2.0	<2.0	11

ANALYTICAL RESULTS
SOIL SAMPLES COLLECTED FROM SOIL BORINGS B-4 THROUGH B-7
ADVANCED ON SAAD PROPERTY
(All Concentrations Parts Per Million (ppm))

Analytical Test	B-4-4	B-5-1	B-6-3	B-7-1
CLP Volatiles Detected Method 8240	Soil Sample from 13.8-15.8' BGL	Soil Sample from 11.2-16.2' BGL	Soil Sample from 15-18' BGL	Soil Sample from 8.0-10.0' BGL
Quantitation Limit (QL)	QL = 0.050 ppm	QL = 0.010 ppm	QL = 0.050 ppm	QL = 0.62 ppm
Toluene	2.1	ND	0.41	13
2-Butanone (MEK)	ND	ND	ND	<5.0
2-Hexanone	ND	ND	ND	<5.0
4-Methyl-2-Pentanone	ND	ND	ND	<5.0
Acetone	ND	ND	ND	<5.0
Ethylbenzene	ND	ND	0.21	2.4
Trichlorethylene	ND	ND	ND	ND
1,2-Dichlorethylene	ND	ND	ND	ND
Xylene	ND	ND	1.6	15
Vinyl Acetate	ND	ND	ND	<5.0
CLP Extractables Detected Method 8270	B-4-4 Soil from 13.8-15.8'	B-5-1 Soil from 11.2-16.2'	B-6-3 Soil from 15-18'	B-7-1 Soil from 8.0-10.0'
Quantitation Limit (QL)	QL = 0.33 ppm	QL = 0.33 ppm	QL = 8.2 ppm	QL = 8.2 ppm
Benzo (A) Pyrene	ND	ND	ND	ND
Benzo (K) Fluoranthene	ND	ND	ND	ND
Chrysene	ND	ND	ND	ND
Fluoranthene	ND	ND	ND	ND
Phenanthrene	ND	ND	ND	ND
Pyrene	ND	ND	ND	ND
2-Methylnaphthalene	ND	ND	ND	20
CLP Extractables Detected Method 8270	B-4-4 Soil from 13.8-15.8'	B-5-1 Soil from 11.2-16.2'	B-6-3 Soil from 15-18'	B-7-1 Soil from 8.0-10.0'
Quantitation Limit (QL)	QL = 0.5 ppm	QL = 0.5 ppm	QL = 0.5 ppm	QL = 0.5 ppm
All Parameters	ND	ND	ND	ND

ND=NOT DETECTED

BGL - Below Ground Level

these low permeabilities are from soil samples collected below the concrete pad on Franklin Brick property and below the limestone boulders on the Site.

3.9 Summary of Soil Boring Investigation

The soil boring investigation confirmed the subsurface conditions exposed during trenching activities. Site subsurface materials consist of backfill material composed of oil-stained sandy, silty clays and limestone boulders with no discrete layering of either material. Approximately five (5) feet of native soil overlays bedrock in Boring B-5. The native soils consisted of medium to light brown silty clay with trace small phosphate nodules.

Bedrock was encountered on-site at sixteen (16) to twenty-three (23) feet below ground and dips slightly to the south. Based on depth to bedrock, it appears this surface is relatively flat-lying throughout the Site. Structural relief of the bedrock surface is minimal, which would indicate that a geologic sinkhole or collapse feature is not present. Bedrock consists of gray, thinly bedded, stylolitic limestone. Cross section A-A, depicted in Figures 3-1 and 3-5, was constructed using soil borings B-4 and B-6 from this investigation and BH-4, 5 and 13 from a 1983 NUS investigation. The cross section graphically illustrates Site subsurface conditions. At the conclusion of the investigation, all soil boring and trench sampling locations were surveyed for horizontal and vertical control.

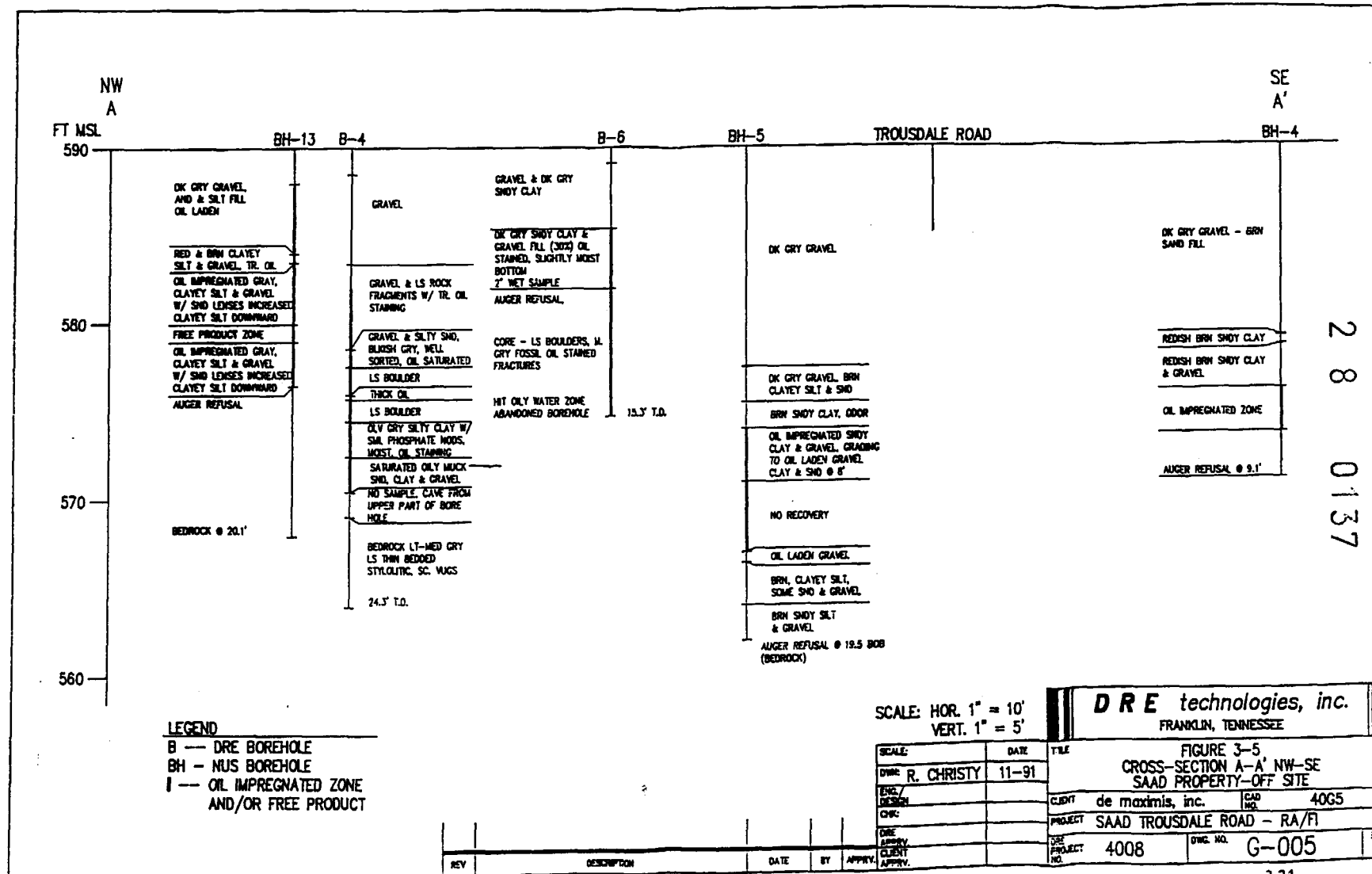
3.10 Historical Aerial Photograph and U.S.G.S. Topographic Map Review and Analysis

Aerial photographs and U.S.G.S. topographic maps of the Oak Hill Quadrangle as well as several previous investigations have been examined to determine if a sinkhole is present as required by the AOC. Table 3-7 summarizes the findings of this review, and the associated aerial photographs and topographic maps are presented in Appendix F.

The 1953 U.S.G.S. topographic map of the Oak Hill Quadrangle shows no depression in the Saad Site area, and the elevation of the property is approximately 590 above sea level.

The 1957 photograph shows a depressed area adjacent to the Site. The walls of the depression appear fairly steep with no vegetation apparent at the bottom of the depression and natural vegetation established around the perimeter of the depression.

The 1963 photograph shows the location and operation of a cement plant just south of



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TABLE 3-7

SUMMARY OF AERIAL AND TOPOGRAPHIC MAP REVIEW

YEAR	MAP OR PHOTOGRAPH	TOPOGRAPHIC FEATURE
1953	U.S.G.S. Topographic Map, Oak Hill Quadrangle	No depression shown
1957	Aerial Photograph	Depression shown
1963	Aerial Photograph	Depression shown, not as deep, vegetation present in depression area
1968	U.S.G.S. Topographic Map, Oak Hill Quadrangle	Closed contour, topographic low, shown with approximately ten (10) feet of relief
1969	Air Photographs	Outline of the depression is shown. Cement operations are not as extensive, vegetation present in depressed area.
1983	U.S.G.S. Topographic Map, Oak Hill Quadrangle, photorevision from air photographs taken in 1981.	Shows location of Franklin Brick Building, Saad Building, and Klein Custom Coach Company, Inc. in relation to topographic depression.

the Saad property. The outline of the depression shown on the 1957 photograph can be detected, but it appears that it may be partially filled, and vegetation is present in the depressed area. There is a large area greater than 400 feet north of the main process area that is apparently covered with cement wash out. The area extends to the southern perimeter of the "depression." The "concrete pad" discovered during the trenching and boring investigations could be the result of operations at the former cement plant.

The 1969 photograph indicates that the cement operation was not as extensive as the 1963 operations as indicated by reestablished vegetation north of the cement operation adjacent to the depression, although the outline of the depression can be delineated.

The 1983 U.S.G.S. topographic map of the Oak Hill Quadrangle shows the location of Franklin Brick, the Site, and Klein Custom Coach Company, Inc. in relation to the closed topographic contours.

3.11 Summary of Investigation Activities

- Site subsurface conditions indicate a significant amount of debris fill from surface to approximately thirteen (13) feet below ground.
- Contamination extends to the soil/bedrock interface, approximately 20 feet below ground.
- Liquid and solid oil-stained materials were observed in borings and trenches.
- Five (5) buried drums containing hazardous constituents were encountered during the investigation. These were removed, sampled, overpacked, and removed from the Site for disposal in February 1992.
- Thirty-one (31) drums of nonhazardous materials accumulated from removal activities and project demobilization were removed from the Site for disposal in January and February 1992.
- A "concrete pad" of variable thickness (1.5 to 7.5 ft.) was discovered and has been traced at variable depths (near surface to 9 ft) in the subsurface of the Franklin Brick property and portions of the Site.
- Water with an oil sheen was observed within cavities created by debris fill in the vadose zone.

- The settling basin area is not a geologic sinkhole or collapse feature based on bedrock depths over the Site, bedrock structural relief, and an analysis of historic aerial photographs.

4.0 SUBSURFACE ANALYTICAL DATA EVALUATION

4.1 Introduction

The purpose of this section is to describe Site soils sampling and analytical results conducted for the purpose of compliance with the Administrative Order by Consent (AOC). The AOC required the determination of the nature and extent of potential soil contamination in and around the Site of a former settling basin. The RA/FI Work Plan required additional sampling to collect chemical and geotechnical data for the settling basin and the Site vadose soils. Soil samples were obtained by trenching, drilling, and excavating the former OWS. Four water samples were collected during the investigation for characterization and disposal.

Sampling locations, rationale, and methods were established by the RA/FI Work Plan. The RA/FI Sample Location Map, Figure 4-1, presents the final Site sampling locations, sample identification number, and sample depth. All samples were submitted to Specialized Assays of Nashville, Tennessee for Target Compound List (TCL), Target Analyte List (TAL) analyses. Specific analyses included volatiles, semivolatiles, PCBs, pesticides, and metals. All analytical laboratory data are presented in Appendix G.

Eighteen (18) soil samples were collected for analysis and Site characterization:

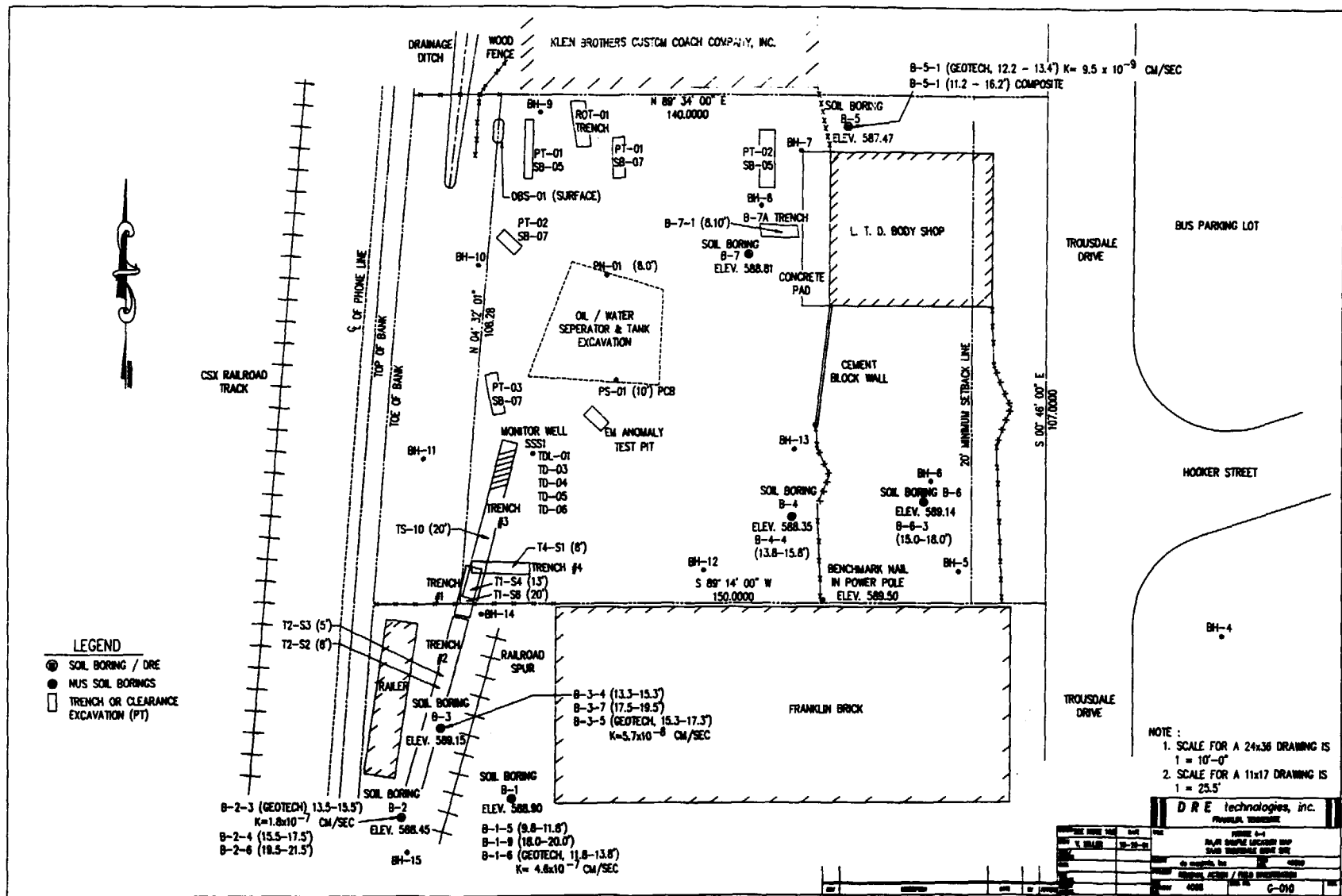
- Two (2) from the OWS excavation located in a generally central Site location.
- Six (6) from trenching excavation located in the southwest corner of the Site.
- Ten (10) from drilling activities located over the Site predominantly in the southwest and eastern areas of the Site.

Four water samples were collected for waste characterization and disposal:

- One (1) from the on-site frac tank that contained perched ephemeral liquids encountered in the trenches and decontamination fluids.
- Two (2) from the OWS.
- One from a test pit in the northwest portion of the Site.

The following sections will describe the results of these analyses.

4.1.1 Laboratory Quality Assurance/Quality Control. Laboratory quality assurance and control methods criteria were established by the Quality Assurance Project Plan, Appendix II of the approved RA/FI Work Plan. Quantitative limit variability was noted for several



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samples by the laboratory with adjustment made to the quantitation limit to address matrix interference.

The laboratory has specified two common matrix problems that may be applicable to the Site:

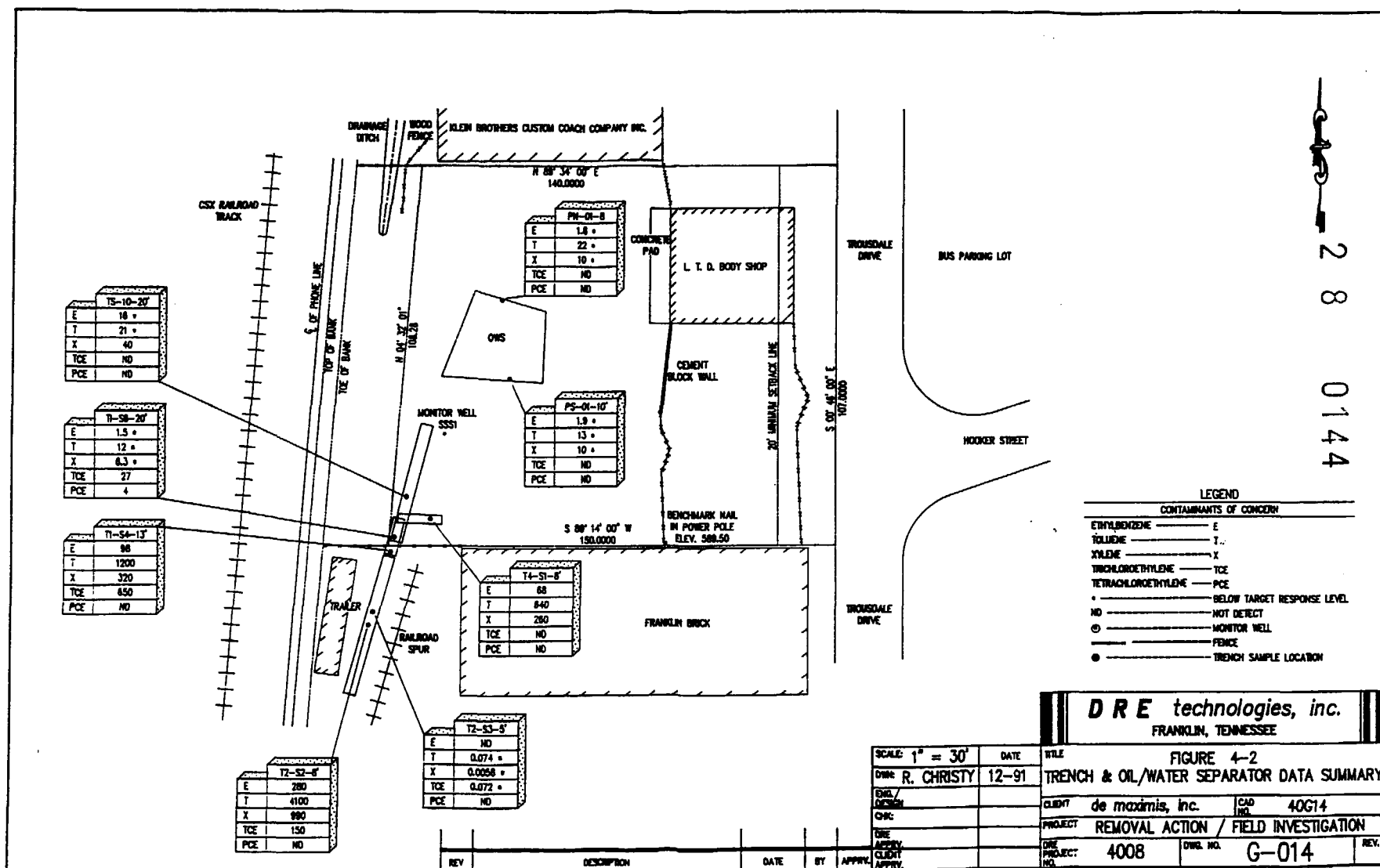
- The inability to concentrate the sample extract to the method prescribed volume following extraction. This occurs in samples with complex and/or elevated constituent levels and prevents the quantitative limit from reaching the method detection limit.
- Matrix interference may prevent the analysis of other volatile organics at levels near the method detection limit in the presence of one volatile compound and at a high concentration.

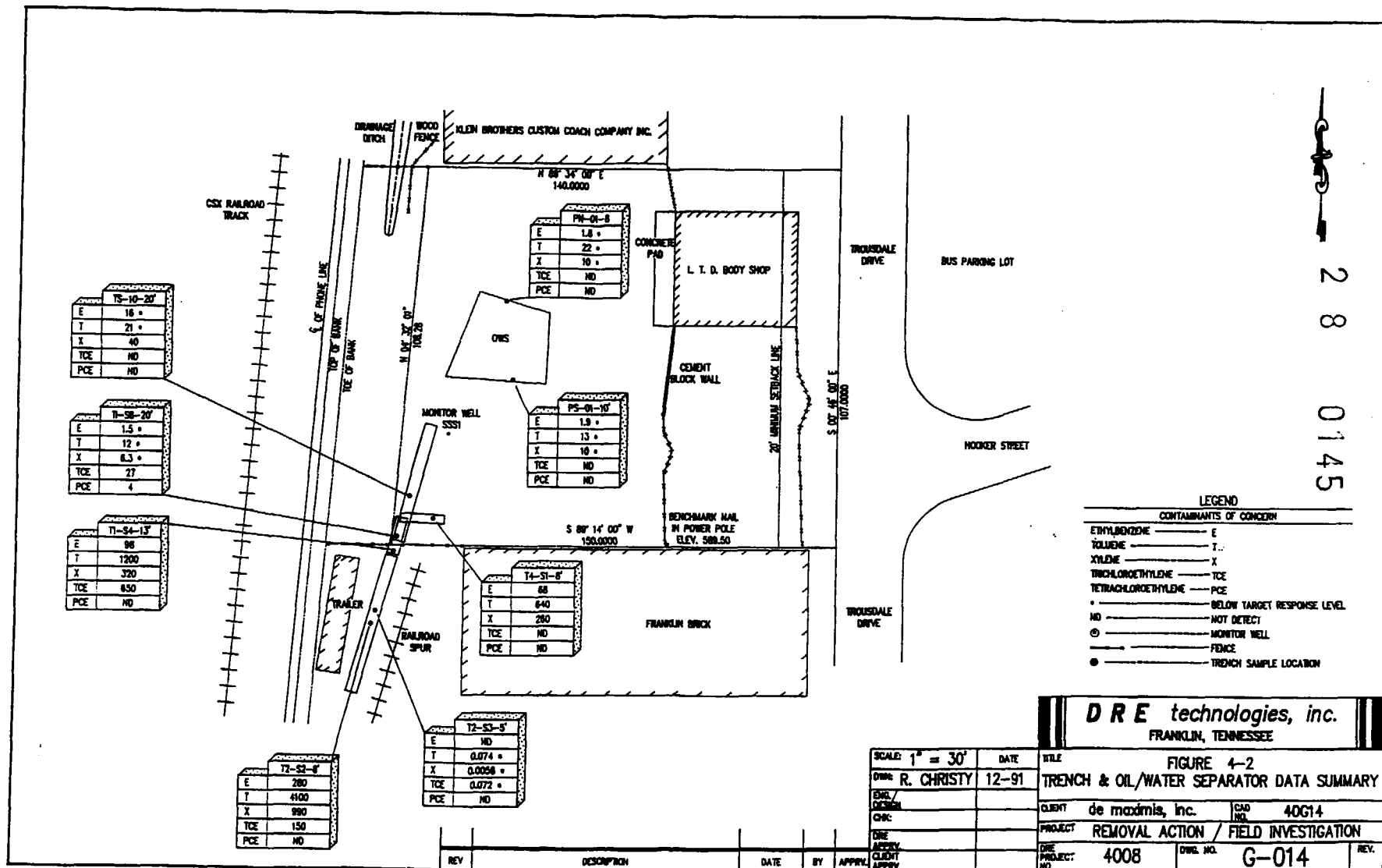
The adjustment of the quantitative limits due to matrix interference is allowed and accepted by the EPA.

4.2 Subsurface Soil Data Evaluation

4.2.1 Oil/Water Separator Soil Sample Analyses. Two soil samples were collected during OWS removal activities. Sample OWS-PN-01 was collected from the northeastern corner of the excavation area. Sample OWS-PS-01 was collected from the south side of the excavation area. Samples were submitted for TAL/TCL analyses. The results of the analyses are presented in Table 2-4 and depicted in Figure 4-2, Trench and Oil/Water Separator Analytical Data Summary. Metal concentrations were found to be higher for the southern corner sample. Lead concentration from OWS-PS-01 was found at 790 ppm compared to a concentration of 25.7 ppm for the northern corner. TCL volatile and semivolatile quantification limits were adjusted due to matrix interference. The quantification limits are at levels that are less than any cleanup standard criteria evaluated. TCL analyses indicated the presence of volatile organics ranging from ND to 22 mg/kg. Sample OWS-PS-01 had a PCB 1248 concentration of 437 ppm.

4.2.2 Trench Soil Sample Analysis. Six (6) soil samples were collected from the four (4) excavated trenches. Analytical results are provided in Table 3-2 and depicted in Figure 4-2. Sample depths varied from five (5) feet to twenty-five (25) feet. Trenching and sampling





activities were performed to determine the footprint of the settling basin area and characterize the associated soils. All samples were submitted for TAL/TCL analyses. The compounds most frequently detected were ethylbenzene, toluene, xylene and trichloroethene. PCB 1242 concentrations were found in two samples at concentrations less than 2.0 ppm.

TCL quantitation limits for trench samples were adjusted due to matrix interference. These quantitation limits are at levels sufficiently low to compare soil contaminant levels to established health risk criteria.

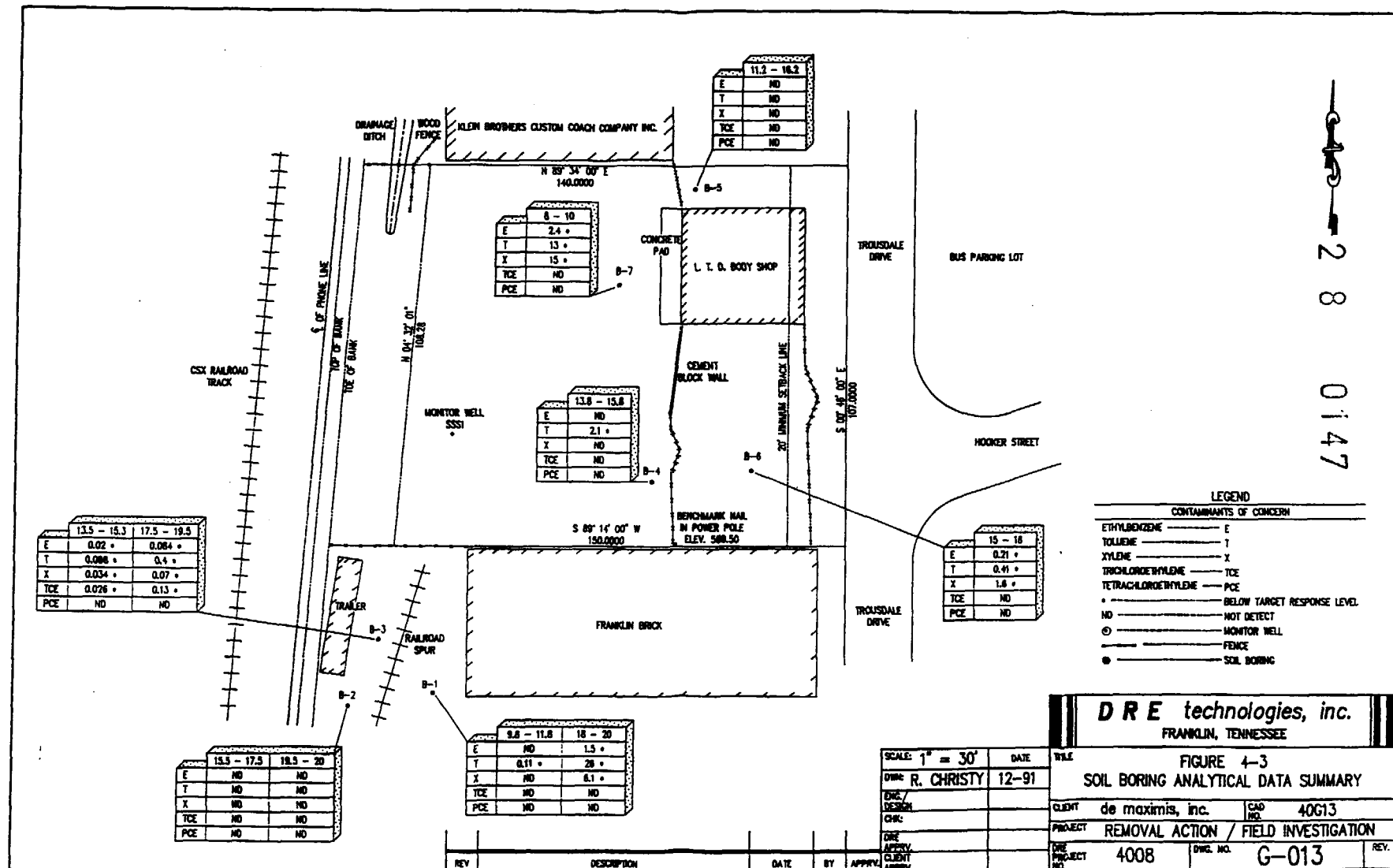
4.2.3 Soil Boring Data Evaluation. Soil borings were conducted at seven Site locations as described below:

- B-1 is located in the southwest corner of the Site adjacent to the southwest corner of the Franklin Brick building.
- B-2 is located in the southwest corner of the Site immediately south of the termination of the trenching area.
- B-3 is located in the center of Trench 3.
- B-4 is located adjacent to the east facility fence and Franklin Brick Building inside the fenced area.
- B-5 is located in the northeast portion of the Site outside the fenced area.
- B-6 is located in the southeast area of the Site outside the fenced area.
- B-7 is located immediately behind the current location of the LTD body shop.

Soil sampling analytical results for soil borings B-1 through B-3 located on the Franklin Brick property are provided in Table 3-4 and depicted in Figure 4-3, Soil Boring Analytical Summary. Samples were collected from each boring location by continuous split spoon sampling and monitoring with PID. Samples for laboratory analysis were selected on the basis of PID readings. Sample B-1-5, collected at a depth of 9.8' - 11.8', was the single sample from the Franklin Brick area boring investigation to contain semivolatile compounds. The compounds identified included benzo (A) pyrene, benzo (K) fluoroanthene, chrysene, fluoranthene, and pyrene.

Samples B-3-4 (13.3' - 15.3') and B-3-7 (17.5' - 19.5') contained eight consistent volatiles with varying concentrations. The volatile compounds included toluene, 2-butanone

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DRE technologies, inc.
FRANKLIN, TENNESSEE

FIGURE 4-3
SOIL BORING ANALYTICAL DATA SUMMARY

SCALE: 1" = 30'
DATE: 12-91
BY: R. CHRISTY
APPV: CHC
PROJECT: 4008
DWC NO: G-013

CLIENT: de maximis, inc.
PROJECT: REMOVAL ACTION / FIELD INVESTIGATION
DWC NO: 40G13
REV: 1

(MEK), 2-hexanone, 4-methyl-2-pentanone, acetone, ethylbenzene, trichloroethylene, 1,2-dichloroethylene, and xylene. These volatiles are consistent with Site sampling data.

Samples B-2-4 (15.5' - 17.5') and B-2-6 (19.5' - 21.5') were the least contaminated. Three volatiles were found in B-2-4: 2-butanone, 2-hexanone, and acetone. Two volatiles, 2-butanone and acetone, were found in B-2-6. No pesticides or PCBs were found at the Franklin Brick area. Samples from B-1 and B-3 may demarcate the termination of contamination in the southwest corner based on the low contaminant concentrations.

Soil borings B-4 through B-7 were performed on the Site. The analytical data for Boring 4-7 located on the Site are summarized in Table 3-6 and depicted in Figure 4-3. One sample was collected from each boring. Sample B-4-4 (13.8' - 15.8') contained a single volatile, toluene, at a concentration of 2.1 ppm. Sample B-5-1 (11.2' - 16.2') indicated no contaminants.

Sample B-6-3 (15' - 18') contained low concentrations of three volatile compounds, toluene at 0.41 ppm, ethylbenzene at 0.21 ppm, and xylene at 1.6 ppm. Boring sample B-7-1 (8' - 10'), located west of the operating body shop, contained variable concentrations of eight volatile compounds, toluene, 2-butanone, 2-hexanone, 4-methyl-2-pentanone, acetone, ethylbenzene, xylene and vinyl acetate. No semivolatiles, pesticides or PCBs were present. The volatile compounds have been noted in past sampling activities. The data is compound consistent, with OWS analysis. Data from Borings 4, 5, and 6 may demarcate the extent of contamination on the Site's eastern boundary and B-7 the extent to the north.

4.3 Water Sample Analysis

Four water samples were collected during the RA/FI for waste characterization and disposal. Sample results are presented in Appendix G. Two samples were obtained from liquids contained in the oil/water separator vessels. These samples, OWS-01 and OWST-01, were analyzed for the full TCLP suite of parameters. Based on the analyses, all compounds were below quantitation limits with the exception of chloroform. Chloroform was detected in sample OWS-01 at a concentration of 0.15 ppm.

One water sample was collected from the on-site frac tank. The frac tank contained all waters encountered during trenching operations and all waters generated by decontamination activities. The frac tank liquid sample was analyzed for the TCL/TAL parameters. A single

volatile organic compound was detected above quantitation limits; the compound 1,2-dichloroethylene occurred at a concentration of 0.048 ppm. Results of the analyses are provided in Appendix G. Liquids from the frac tank and OWS were disposed of at the Tricil facility as nonhazardous wastewater.

One liquid sample was obtained from a test pit located at the northwest portion of the Site. Sample ROT-01 was collected from oily waters encountered in a test pit excavation during clearance of a proposed borehole location. Approximately 130 gallons of the liquids were removed, sampled, and drummed for future disposal. This sample was analyzed for the full TCL/TAL suite of parameters and TRPH. Based on the analyses, the sample contained three organic compounds above quantitation limits: toluene (0.57 ppm), 1,2-dichloroethylene (3.6 ppm), and xylene (0.2 ppm). In addition, the TRPH analysis revealed a concentration of 7,797 ppm. The laboratory data is presented in Appendix G.

4.4 Summary

Soil sampling was performed in four general Site locations, including the oil water separator excavation, southwest corner, eastern margin, and inside the former active area adjacent to the existing body shop. A summary of the soil analytical data providing the frequency of detection and range of constituent concentrations is provided in Table 4-1. The evaluation of soils data indicates:

- Low levels of volatile organics in the OWS soils. In addition, one sample detected PCB in excess of 400 mg/kg and lead in excess of 500 mg/kg. Neither PCB or lead were found at these levels at other sampling locations, indicating a potential single point source.
- Elevated levels of volatile organics in the southwest corner trenching locations appear to dissipate to the south at a line established by the southern wall of the Franklin Brick Building and to the north at a line established by B-7 based on boring sample data.
- Low levels of contaminants at B-4 indicate an eastern boundary of impact from former Site operations.

TABLE 4-1

SOILS SAMPLING ANALYTICAL RESULTS SUMMARY

COMPOUND	FREQUENCY OF DETECTION	MG/KG		SECOND HIGH
		MIN	MAX	
VOC'S				
Ethylbenzene	12/18	ND	280	98
Toluene	15/18	ND	4100	1200
Xylene	13/18	ND	990	320
Acetone	7/18	ND	170	0.18
2 Butanone	6/18	ND	0.34	0.28
2 Hexanone	3/18	ND	0.18	0.032
4-Methyl-2-Pentanone	4/18	ND	0.11	0.084
1,2 Dichloroethylene	5/18	ND	890	15
Trichloroethylene	6/18	ND	650	150
Trichlorofluormethane	1/18	ND	3.3	ND
Tetrachloroethylene	1/18	ND	4	ND
Vinyl Acetate	1/18	ND	5	ND
SEMI-VOLATILES				
Phenol	2/18	ND	8.1	6.6
Napthalene	2/18	ND	16.5	3
2 Methylnapthalene	4/18	ND	20	4.9
2,4 Dimethylphenol	2/18	ND	29	5.3
2 Methylphenol	1/18	ND	0.92	ND
4 Methylphenol	1/18	ND	14	ND
Benzo(a)pyrene	1/18	ND	1.9	ND
Benzo(k)flurothene	1/18	ND	3.9	ND
Fluorothene	1/18	ND	6.2	ND
Chrysene	1/18	ND	2.3	ND
Phenanthrene	1/18	ND	5.2	ND
Pyrene	1/18	ND	7.8	ND
PESTICIDES/PCBs				
PCB 1248	1/18	ND	437	ND
PCB 1242	2/18	ND	1.7	0.84

Evaluation of the soils data indicates that the most frequently detected compounds at elevated concentrations are ethylbenzene, toluene, xylene, and trichloroethylene. The highest concentrations of these and other organic compounds occur in a localized area on the southwest portion of the Site in the vicinity of the former settling basin. Section 5.0, Appropriate Response Levels, will provide additional soils data evaluation, particularly as it relates to existing environmental and health risk criteria.

5.0 APPROPRIATE RESPONSE LEVELS

Site soil analytical results described in Section 4 were reviewed and compared with legally applicable or relevant and appropriate requirements (ARARs). ARARs may be classified into three categories:

- Chemical-specific requirements.
- Location-specific requirements.
- Action-specific requirements.

Chemical-specific ARARs are usually health or risk-based numerical values or methodologies which, when applied to Site-specific conditions, result in the establishment of numerical values for specific hazardous substances regulated under CERCLA. These values establish the acceptable amount or concentration of a chemical that may be found in or discharged to the ambient environment. No chemical-specific ARARs were identified for soils at the Site.

Location-specific ARARs are restrictions placed on the concentration of a chemical or the conduct of activities solely because they occur in special locations, such as floodplains or wetlands. The Site is located in an industrial area and bounded by industrial operations. Location-specific ARARs do not apply to the Site.

Action-specific ARARs are usually technology or activity-based requirements or limitations on actions taken with respect to waste management or Site cleanup. Action-specific ARARs have been identified and are discussed in Section 6.

In addition to ARARs, other federal and state criteria, advisories, or guidelines are considered relevant to establishing appropriate response levels and are evaluated as To Be Considered (TBC) criteria. Three TBC criteria were identified, two federal health and risk based criteria and Tennessee Department of Environment and Conservation (TDEC) proposed Tennessee soils cleanup levels guidance. TBCs are appropriate when they promote protection of human health and the environment.

5.1 Preliminary Response Levels

The absence of ARARs relative to soils resulted in evaluation of TBCs. Based on the location of the Site in Tennessee, the evaluation focused on the proposed Tennessee soils cleanup

levels. These levels were developed by a multidiscipline committee from the Tennessee Department of Environment and Conservation (TDEC) specifically for application in the state of Tennessee for protection of human health and the environment. The proposed TDEC levels are separated into residential and industrial soils (letter from TDEC to F. Stroud dated 13 September 1991). The proposed Tennessee Industrial Soils Cleanup Level (TISCL) guideline has been selected as the Target Response Levels (TRLs) for evaluation of soil response activities. Tennessee's draft levels are consistent with regulatory response levels now in use by the states of Washington, South Carolina, and New Jersey. The Tennessee Division of Superfund have applied these levels for response actions in Tennessee.

5.2 Contaminants of Concern for the Saad Trousdale Drive Site

After a thorough review of the Site analytical data, a list of all compounds detected during the investigation and their detection frequency was developed (Table 5-1). Indicator compounds for the Site were determined through an analysis of these compounds and their concentrations relative to the proposed Tennessee Industrial Soils Cleanup Levels. The compound list is presented in Table 5-2. Indicator compounds identified for Site response include: ethylbenzene, toluene, xylene, trichloroethylene, tetrachloroethylene, cadmium, lead, and PCB 1248. The two metals, cadmium and lead, and the PCB 1248 sample represent single data points from a localized area and are not indicative of Site characteristics. Additional Site sampling and analysis may be required to confirm the presence and concentrations of the Cd, Pb, and PCB in the area of the OWS. As a result, the response alternative analysis will primarily address those compounds indicative of Site characteristics based on frequency of detection above TRLs.

INDICATOR CHEMICALS FOR THE
SAAD TROUSDALE DRIVE SITE BASED ON
COMPARISON WITH PROPOSED TENNESSEE
SOILS CLEANUP LEVELS

COMPOUND	FREQUENCY OF DETECTION	MG/KG		SECOND HIGH	TN CRITERIA
		MIN	MAX		
VOC'S					
Ethylbenzene	12/18	ND	280	98	20
Toluene	15/18	ND	4100	1200	40
Xylene	13/18	ND	990	320	20
Acetone	7/18	ND	170	0.18	NA
2 Butanone	6/18	ND	0.34	0.28	NA
2 Hexanone	3/18	ND	0.18	0.032	NA
4-Methyl-2-Pentanone	4/18	ND	0.11	0.084	NA
1,2 Dichloroethylene	5/18	ND	890	15	NA
Trichloroethylene	6/18	ND	650	150	0.5
Trichlorofluormethane	1/18	ND	3.3	ND	NA
Tetrachloroethylene	1/18	ND	4	ND	0.5
Vinyl Acetate	1/18	ND	5	ND	NA
SEMI-VOLATILES					
Phenol	2/18	ND	8.1	6.6	NA
Napthalene	2/18	ND	16.5	3	20
2 Methylnapthalene	4/18	ND	20	4.9	NA
2,4 Dimethylphenol	2/18	ND	29	5.3	NA
2 Methylphenol	1/18	ND	0.92	ND	NA
4 Methylphenol	1/18	ND	14	ND	NA
Benzo(a)pyrene	1/18	ND	1.9	ND	20
Benzo(k)flurothene	1/18	ND	3.9	ND	20
Flurothene	1/18	ND	6.2	ND	NA
Chrysene	1/18	ND	2.3	ND	20
Phenanthrene	1/18	ND	5.2	ND	NA
Pyrene	1/18	ND	7.8	ND	20
PESTICIDES/PCBs					
PCB 1248	1/18	ND	437	ND	10
PCB 1242	2/18	ND	1.7	0.84	10

ND -- Not detected
NA -- Not applicable

TABLE 5-2
INDICATOR CHEMICALS FOR THE
SAAD TROUSDALE DRIVE SITE BASED ON
COMPARISON WITH PROPOSED TENNESSEE
SOILS CLEANUP LEVELS

COMPOUND	CONCENTRATION, MG/KG		
	MINIMUM	MAXIMUM	TN CRITERIA
VOC'S			
Ethylbenzene	0.01	280	20
Toluene	0.01	4100	40
Xylene	0.01	990	20
Trichloroethylene	0.01	650	0.5
Tetrachloroethylene	0.01	4	0.5
METALS			
Cadmium	1	26.6	10
Lead	16.2	790	500
PCB 1248	0.5	437	10

6.0 ANALYSIS OF RESPONSE ACTION ALTERNATIVES

6.1 Response Action Objectives

Response action objectives consist of medium specific or operable unit specific goals for protecting human health and the environment. Section 5 defines those constituents that exceed Target Response Levels (TRLs). These standards will be used as guidance and a basis for the evaluation of response action alternatives.

The potential exposure routes for soils include direct contact, ingestion, and inhalation of airborne particulates. These exposure routes particularly apply during excavation. The primary environmental concern regarding soil contamination is the leaching of contaminants into groundwater. The selected response alternatives must reduce the mobility, toxicity, or volume of contaminated material. The application of the selected response alternatives will minimize the potential for groundwater impact. The response action objectives have been established on the foregoing criteria. The response action objectives are:

- Reduce potential risk to human health associated with potential contact and/or ingestion of contaminated soil.
- Reduce or eliminate potential groundwater contaminant sources.

6.2 Response Goal

The response goal for the Site is to reduce soil contaminant levels to proposed TISCLs. A description of the Site soils contaminant characteristics is provided in Section 5. The indicator compounds have been defined as ethylbenzene, toluene, xylene, tetrachloroethylene, trichloroethylene, and 1,2-dichloroethylene. PCB 1248 and lead were detected at a level above the TRL in one sample at one location and are not indicative of Site characteristics. Cadmium, found in two samples above the TRL, also is not indicative of overall Site characteristics and is within the extreme limits of native soil concentrations (Dragun, J., 1988). In addition, the cation exchange potential of the soils indicates metals at such concentrations are likely to be immobile. Target response levels (TRLs), based on proposed TISCLs, are summarized and presented in Table 6-1.

TABLE 6-1
TARGET RESPONSE LEVELS
BASED ON PROPOSED TENNESSEE INDUSTRIAL
SOIL CLEANUP STANDARDS

Constituent	Target Response Level mg/kg	No. of Locations Exceeding TRL/No. of Samples
Ethylbenzene	20.0	3/18
Toluene	40.0	3/18
Xylene	20.0	4/18
Tetrachloroethylene	0.5	1/18
Trichloroethylene	0.5	3/18
Lead	500.0	1/18
Cadmium	10.0	2/18
PCB 1248	10.0	1/18

6.3 Preliminary Analysis of Response Alternatives

Response alternatives were developed in conformance with the requirements established in the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300). A review of additional literature, including the U.S. EPA documents "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final," "Treatment Potential for 56 EPA Listed Hazardous Chemicals in Soil," and the "Handbook for Remedial Action at Waste Disposal Sites," was conducted to identify potentially applicable response alternatives. The following list of response alternative categories was developed:

- No Action
- Limited Action
- Containment
- Treatment
- Removal

Specific alternatives within each response category considered appropriate for Site-specific conditions are summarized and presented in Table 6-2, Response Alternatives.

6.4 Screening of Soil Response Alternatives

The development and screening of response action alternatives was accomplished by evaluation of the following three criteria:

- Effectiveness
- Implementability
- Cost

The effectiveness of each response alternative refers to the degree to which the alternative reduces contaminant mobility, toxicity, or volume and the degree to which the alternative protects human health and the environment. The implementability of a response refers to the technical feasibility and availability of the response alternative. Cost estimates were developed for each alternative and reviewed during the screening process. Cost estimates are based on Site-specific data currently available and are considered to be within a +50/-30% accuracy range. The screening process for each response alternative is discussed in the following sections. Results of the screening process are summarized in Tables 6-3 through 6-5.

TABLE 6-2
RESPONSE ALTERNATIVES

ACTION	TECHNOLOGY
No Action	
Limited Action	Access Restrictions Deed Restrictions Monitoring
Containment	Capping
Treatment	In situ Bioremediation Vapor Extraction Low Temperature Thermal Desorption
Removal	Excavation and Disposal

TABLE 6-3

**PRELIMINARY ANALYSIS - RESPONSE ALTERNATIVES
SHORT-TERM EFFECTIVENESS**

SHORT-TERM EFFECTIVENESS				
ACTION	TECHNOLOGY	MOBILITY VOLATILES	TOXICITY VOLATILES	MASS VOLATILES
No Action		N	N	N
Limited Action	Access Restrictions	N	N	N
	Deed Restrictions	N	N	N
	Monitoring	N	N	N
Containment	Capping	M	N	N
Treatment	<u>In-situ</u> Bioremediation	M	Y	Y
	<u>In-situ</u> Vapor Extraction	Y	Y	Y
	Low Temperature Thermal Desorption	Y	Y	Y
Removal	Excavation and Disposal	M	M	Y

N - Not Effective

M - Marginally Effective

Y - Effective

TABLE 6-4

**PRELIMINARY ANALYSIS - RESPONSE ALTERNATIVES
LONG-TERM EFFECTIVENESS**

LONG TERM EFFECTIVENESS				
ACTION	TECHNOLOGY	MOBILITY VOLATILES	TOXICITY VOLATILES	MASS VOLATILES
No Action		N	N	N
Limited Action	Access Restrictions	N	N	N
	Deed Restrictions	N	N	N
	Monitoring	N	N	N
Containment	Capping	M	N	N
Treatment	Insitu Bioremediation	M	M	M
	Insitu Vapor Extraction	Y	Y	Y
	Low Temperature Thermal	Y	Y	Y
	Desorption			
Removal	Excavation and Disposal	Y	Y	Y

N - Not Effective

M - Marginally Effective

Y - Effective

TABLE 6-5

PRELIMINARY ANALYSIS - RESPONSE ALTERNATIVES

		IMPLEMENTABILITY		PRELIMINARY ARAR COMPLIANCE	
ACTION	TECHNOLOGY	TECHNICAL	ADMINISTRATIVE	PROPOSED TISCL	LOCATION
No Action		1	1	No	Yes
Limited Action	Access Restrictions	2	1	No	Yes
	Deed Restrictions	2	1	No	Yes
	Monitoring	2	1	No	Yes
Treatment	Capping	3	2	No	Yes
Treatment	In-situ Bioremediation	2	2-3	M ¹	Yes
	Insitu Vapor Extraction	2	2-3	Yes	Yes
	Low Temperature Thermal Desorption	4	4	Yes	M ²
Removal	Excavation and Disposal	4	4	Yes	Yes ³

Degree of Difficulty
 1-----5
 Easily Not
 Achievable Achievable

¹Removal/reduction efficiency has not been determined.

²Thermal desorption processes can create site specific problems due to space limitations, air quality concerns, and permitting.

³Excavation and disposal activities will impact human health and safety, adjacent business property, traffic patterns, etc.

6.4.1 No Action Alternative. As required by the NCP, the no action alternative has been included as a response alternative, thereby providing a baseline for evaluating other response alternatives.

Technical Description. The no action alternative means no further actions would be undertaken to address Site soil contamination. Current interaction between the Site soils and the surrounding environment would be allowed to continue.

Effectiveness. The no action alternative will not preclude the movement of contaminants from the Site or reduce the toxicity or the volume of contaminated material. The mass of contaminated material would decrease over time due to natural biodegradation, aeration, and migration off-site. The no action alternative could be moderately effective at reducing the risk to human health by dermal or ingestion pathways if Site security fencing is maintained and deed restriction initiated.

Implementability. The no action alternative is readily implementable.

Costs. Costs associated with maintaining the no action alternative would be minimal.

Screening Conclusion. The no action alternative will allow the current interaction between the Site soils and the environment to continue. The NCP suggests that the no action response alternative be retained for further evaluation during the detailed analysis of response alternatives. Therefore, the no action alternative will be retained for use as a baseline to compare chosen response alternatives as a measure of their effectiveness. If Site security fencing is maintained and deed restrictions initiated, the no action alternative could be moderately effective at reducing the risk to human health through dermal contact and ingestion of Site soils.

6.4.2 Limited Action Alternative. The limited action alternative is typically implemented with the no action alternative and consists of security fencing around the perimeter

of the Site and deed restrictions.

Effectiveness. Mobility and volume of contaminated material is not effectively reduced by this alternative. However, toxicity could be reduced by restricting Site access to humans, thus lowering the risk of dermal contact or soil ingestion.

Implementability. The limited action response alternative is readily implementable.

Costs. The costs associated with the limited action alternative would be minimal.

Screening Conclusion. Although access to the Site, and thereby risk of exposure, may be effectively reduced by the limited action alternative, contaminant toxicity, mobility and volume are not significantly reduced except through natural attenuation. Restricting Site access would significantly reduce the risk of dermal contact or ingestion of Site soils. The limited action alternative will be retained and considered as an addition to the no action alternative.

6.4.3 Containment Response Alternatives. Containment can be an effective response where subsurface waste remains in place and the goal is to prevent contaminant migration off-site. The containment alternative, as outlined in Table 6-2, is discussed below.

6.4.4 Capping. Capping is an effective method of reducing the interaction between the surface environment and subsurface contaminated material.

Technical Description. The capping alternative involves the construction of a low-permeability cap over the area of contaminated soils as source control by minimizing the contact between infiltrating rainwater and the contaminated soils.

Effectiveness. Capping is a reliable technology for sealing off subsurface contaminant sources from the aboveground environment and significantly reducing mobility.

Implementability. The capping alternative is technically feasible and could be installed at the Site. However, there are serious technical considerations associated with a multilayer cap installation. Some excavation would be required for contouring. Excavation has the potential for release of contaminants to the atmosphere, resulting in potential exposure risks to Site and adjoining business workers. Excavation also creates a potential temporary pathway for release of materials to groundwater from the ephemeral perched conditions encountered during exploratory trenching. There also exists the serious potential to damage adjoining business foundations by excavating Site fill materials.

A cap would be installed over the fill material. Obtaining compaction and maintaining cap integrity is a significant engineering consideration. Capping may also require future land use restrictions and will require long-term maintenance.

The design standards for a cap may have to be Site-specific and could involve only a minimal soil and vegetative cover. This would effectively eliminate the direct contact exposure pathway for Site soils and also reduce subsurface contaminant mobility. A cover of this type may also enhance the implementation and effectiveness of *in situ* treatment technologies such as soil vapor extraction.

Costs. The cost associated with the installation of a cap at the Site would include: excavation and contouring of surface soils to allow for the cap design, characterization and subsequent disposal of contaminated soils at an approved facility, cap material costs, and all associated labor required for cap construction. The estimated costs to install a cap/cover range from \$181,000 to \$1,315,000. Estimated costs are detailed in Appendix H.

Screening Conclusion. Multilayer capping is rejected based on implementability considerations. A soil cover is retained as a containment process alternative for evaluation in conjunction with other *in situ* technologies.

6.5 Treatment Response Alternatives

Three (3) treatment response alternatives, as listed in Table 6-3, were evaluated with respect to contaminant mobility, toxicity, and mass reduction. Treatment alternatives reviewed included:

- *In situ* Bioremediation.
- *In situ* Vapor Extraction.
- Low Temperature Thermal Desorption.

6.5.1 *In situ* Bioremediation.

Technical Description. *In situ* biological treatment enhances the naturally occurring microbial activities found in subsurface soils. Breakdown and removal of contaminants can be accelerated by the addition of oxygen, inorganic nutrients, and prepared or *in situ* microbial populations. *In situ* bioremediation has proven successful in treating heavier petroleum products such as those associated with TRPH. The primary disadvantage of bioremediation is potential short-circuiting due to heterogeneous subsurface debris. Other disadvantages of *in situ* bioremediation include continued reapplication of oxygen, nutrients, and microbes; no guarantee of achieving cleanup levels; difficulty in predicting the time frame required for cleanup; and limited demonstrated success in treating chlorinated organic compounds.

Ex situ biodegradation was rejected as a response alternative technology based on the previously identified technical considerations associated with excavation. Excavation is considered the greatest exposure risk to human health and the environment. This, in conjunction with severe space limitations for debris segregation, and installation of treatment equipment resulted in rejection.

Effectiveness. In the short term, *in situ* biodegradation is moderately capable of effecting the mobility of volatile contaminants, reduces the toxicity of contaminants in soil, and reduces the mass of contaminated soil with time. Bioremediation may effectively treat heavy petroleum products such as TRPHs.

Implementability. *In situ* bioremediation could be implemented at the Site. However, due to the nonhomogeneous subsurface conditions of the backfill debris at the Site, accurate additions of oxygen and nutrients may be difficult, resulting in isolated pockets of untreated soil. These untreated areas could be addressed with the addition of *in situ* vapor extraction, or *in situ* biodegradation could be applied as necessary to enhance the effectiveness of vapor extraction.

Costs. The estimated cost to initiate an *in situ* bioremediation system at the Site is estimated at \$400,000. The estimated costs are presented in Appendix H.

Screening Conclusion. *In situ* bioremediation could reduce the mobility, toxicity, or volume of the contaminants of concern effectively over the long term. The complexity of the subsurface conditions due to the debris backfill could be addressed in design or with the implementation of supporting unit processes. The degree of effectiveness cannot be predicted. As a result, *in situ* biodegradation is rejected as a stand-alone treatment technology.

6.5.2 *In situ* Vapor Extraction.

Technical Description. *In situ* vapor extraction involves the application of a subsurface vacuum to extract volatile organic compounds (VOCs) from soils in the vadose zone. A vacuum is applied via the installation of subsurface galleries or wells screened to target areas of known contamination. Contaminants are brought to the surface both as vapors (volatilized from the soils) and liquid (condensate). Contaminated vapors and liquids are then separated at the surface.

Entrained water would be collected for treatment at an off-site facility. Based on design data, estimates of potential air emission rates would establish any emissions control requirements. Technologies most commonly used for this application are vapor phase carbon adsorption or catalytic thermal oxidation. Off-gas treatment technology, if necessary, would be selected during design activities.

The heterogeneous subsurface conditions at the Site create the potential for air flow short-

circuiting and isolated pockets of ephemeral water. These situations are commonly addressed in design with the use of temporary Site cover to enhance Site desiccation and to identify any short-circuiting and provide subsurface air flow control. Installation of temporary gas piezometers are used to identify any short-circuiting, and extraction wells can be designed to remove isolated pockets of water while continuing to extract soil gas.

Effectiveness. *In situ* vapor extraction is a proven technology that will reduce the mobility, toxicity, and volume of volatile contaminants at the Saad Site. Advantages of vapor extraction include:

- Ability to remediate simultaneously both soil and isolated pockets of ephemeral liquids resulting from heterogeneous subsurface conditions.
 - Ability to remove both chlorinated and nonchlorinated volatile and semivolatile organics.
 - Low treatment operation costs.
 - Minimal Site construction.
 - The ability to remove VOC contamination under structures.
 - Rapid removal rates.
 - Can be enhanced using hot air or pressure-assisted vapor extraction.
 - Creates subsurface aerobic conditions that enhance natural biodegradation.
- Nutrients and microbes can also be added to accelerate this process.

Implementability. *In situ* vapor extraction could be implemented at the Site. There are several technical implementability issues that can be addressed in design. These include potential short-circuiting due to subsurface debris and installation techniques for the extraction wells.

Costs. The cost estimated for *in situ* vapor extraction is \$995,000. The basis for and estimated costs are provided in Appendix H.

Screening Conclusion. *In situ* vapor extraction should be evaluated further based on its

short and long-term ability to remove volatile organics contaminants from soil.

6.5.3 Low Temperature Thermal Desorption.

Technical Description. Low temperature thermal desorption involves treating contaminated soils by subjecting excavated soil to a temperature, usually 400 to 600°F, sufficient to volatilize the organics absorbed on the soils. These temperatures are not high enough to destroy all organic compounds, so further treatment of desorber off-gas is usually required. Additional off-gas treatment technologies include condensation followed by off-site disposal, high temperature thermal treatment, or vapor phase carbon adsorption.

The previously identified Site-specific issues associated with excavation apply to thermal desorption. In addition, a large area is needed to effect segregation/storage and for the treatment unit. Thermal desorption activities, as well as excavation and segregation can be severely impacted by inclement weather. This can be addressed in design, but generally requires support building construction.

Design emissions estimates will establish off-gas treatment requirements. If the treatment unit must be located off-site, then state/local permits will be required. This response alternative has significant administrative implementability issues.

Effectiveness. Low temperature thermal desorption is a proven technology that would be effective at reducing the toxicity, mobility, and volume of contaminants. Several drawbacks are associated with low temperature thermal desorption. These include:

- Labor intensity.
- Excavation impact on adjoining businesses and building structural stability.
- Potential VOC air emissions associated with excavation.
- Unsuitable feed materials without extensive segregation staging and decontamination activities.
- Air permits may be necessary.
- Thermal treatment results in concentration of inorganic constituents and may require additional treatment, such as stabilization, prior to ultimate disposal.

Implementability. Low temperature thermal desorption would be difficult to implement at the Site based on the available space for treatment units on-site and the potential exposure risks from VOC emissions resulting from excavation and potential permitting and community relations issues related to siting the treatment system.

Costs. The cost estimated for low temperature thermal desorption to bedrock is \$3,900,000. Estimated costs are provided in Appendix H.

Screening Conclusion. Low temperature thermal desorption is rejected based on the numerous disadvantages associated with excavation and the significant technical and administrative difficulties of implementing this alternative. Other treatment technologies are available that provide an equivalent level of protection of human health and the environment.

6.6 Excavation and Disposal

Technical Description. This alternative involves the excavation of Site soils and debris, decontamination of large debris items for use as backfill, and transportation and disposal of waste materials as appropriate based on Site-specific waste characterization. Soils and debris segregation will be required to remove the large volume of debris present in the upper ten (10) feet. Segregated debris may require powerwashing to remove oily residues prior to use as backfill or off-site disposal. The large boulders present could be rubbled after cleaning for use as backfill. Once all contaminated soil and debris have been removed to bedrock, approximately twenty (20) feet below ground surface, the excavated area would be backfilled to grade with clean fill materials and seeded for vegetative cover.

The current regulatory environment for off-site disposal creates significant issues associated with commercial disposal facility acceptance based on characterization data, potential requirement for substantial pretreatment prior to disposal, commercial facility capacity availability, and with off-site storage requirements resulting from anticipated disposal delays.

Effectiveness. This alternative would reduce the long-term mobility, toxicity, and volume of contaminated material.

Implementability. Excavation is technically feasible due to the relatively shallow depth to bedrock on-site. Health and safety concerns would be greatly increased during the excavation and segregation process to the public and adjoining businesses due to VOC emissions. An additional consideration is the lack of Site space available for both excavation and segregation/staging of contaminated waste materials. Due to the close proximity of adjoining business, excavation presents serious concerns with respect to structural stability of these buildings.

Costs. Several different costs are associated with excavation and disposal. The costs are identified and listed in Appendix H. The estimated costs range from \$4,000,000 to \$25,000,000, dependent on pretreatment requirements and final off-site locations.

Screening Conclusion. This alternative is feasible and would reduce mobility, toxicity, and volume. However, as a stand-alone technology, this alternative is rejected based on the health and safety concerns and the numerous disadvantages associated with full-scale Site excavation and existing Site space limitations for segregation and characterization of waste materials prior to off-site disposal. Partial excavation, segregation, and disposal may be utilized to facilitate the implementation of an *in situ* technology such as SVE.

6.7 Comparative Analysis of Response Alternatives

Applicable general response actions and technologies addressing Site soil contamination have been identified and screened according to Site compounds and conditions, effectiveness in meeting response action objectives, and implementability. The response actions and technologies that were screened included:

- No action (required by NCP).
- Access restrictions.
- Deed restrictions.
- Monitoring.
- Capping.
- *In situ* bioremediation.

- *In situ* soil vapor extraction.
- Low temperature thermal desorption.
- Excavation and off-site disposal.

Based on the initial screening of these response actions and technologies, Site applicable response alternatives were retained for additional evaluation and analysis. Each response alternative was evaluated by the following criteria:

- Short-term effectiveness.
- Long-term effectiveness.
- Reduction of toxicity, mobility, or volume through treatment.
- Implementability.
- Compliance with the proposed TISCL.
- Overall protection of human health and the environment.
- Cost.

The screening and evaluation process resulted in the elimination of certain response alternatives. A summary of the technologies evaluated for the treatment of contaminated soils at the Site and the results of the screening evaluation are presented in Table 6-6. Response alternatives that have been rejected and the justification are as follows:

- **No action.** Not effective, no reduction of toxicity, mobility or volume, does not meet TISCLs, and not protective of human health or the environment.
- **Limited action.** Not effective, no reduction of toxicity, mobility or volume, does not meet TISCLs, and not protective of human health or the environment.
- ***In situ* bioremediation.** Marginally effective due to heterogeneity of subsurface, marginally effective with reduction of toxicity, mobility, and volume of chlorinated organic compounds. However, this technology can be effective *in situ* for petroleum products and can be implemented in conjunction with other technologies, such as SVE.
- **Low temperature thermal desorption.** Due to Site-specific conditions involving limited space, unsuitable feed materials, exposure risks associated with excavation, proximity of adjoining active businesses and administrative implementability considerations such as permitting, thermal desorption is rejected.

TABLE 6-6
SCREENING EVALUATION OF RESPONSE ALTERNATIVES

RECOMMENDATIONS		
ACTION	TECHNOLOGY	RECOMMENDATION
No Action		Reject
Limited Action	Access Restrictions Deed Restrictions Monitoring	Reject Reject Reject
Containment	Capping	Retain ¹
Treatment	Insitu Bioremediation Insitu Vapor Extraction Low Temperature Thermal Desorption	Reject ² Retain Reject ³
Removal	Excavation and Disposal	Reject ³

¹Retain as a cover; process alternative for in-situ technologies.

²As primary alternative. May be considered as secondary treatment alternative.

³Response alternative to be re-evaluated upon completion of the additional site characterization study.

Additionally, other technologies are available that provide an equivalent level of protection of human health and environment. Although low temperature thermal desorption is rejected on the basis of current Site data, the use of this technology will be reevaluated after additional Site characterization is completed.

- **Excavation and disposal.** Due to Site-specific conditions involving limited space, exposure risks associated with excavation and the proximity of adjoining active businesses, this alternative was rejected. There are also significant implementability issues associated with segregation, characterization and disposal options that may preclude timely implementation. This includes disposal and/or treatment capacity availability. Other significant safety concerns involve travel of several thousand trucks in an area of intense traffic. Although excavation and disposal was rejected as a stand-alone response alternative, it will be reevaluated after additional Site characterization is completed. Partial excavation, segregation, and disposal may be utilized to facilitate the implementation of an *in situ* technology such as SVE.

The alternative evaluation process retained one containment technology and one treatment technology as summarized below:

- **Capping.** This containment technology is effective at reducing contaminant mobility. It also eliminates the direct contact pathway to the Site soils. Installation of a multilayer cap presents significant implementability issues. However, capping was retained in the form of a simplified cover, possibly even temporary, that would also be effective at enhancing the effectiveness of the retained treatment alternative.
- ***In situ* vapor extraction.** This is a proven, effective technology for subsurface treatment of volatile and semivolatile compounds. The effectiveness of the technology is further enhanced by the creation of subsurface aerobic conditions that result in demonstrated increased natural biodegradation. SVE also is effective in evacuating ephemeral perched water zones and can easily be designed for expansion or modification should Site conditions dictate. Use of a cover/cap in conjunction with SVE enhances subsurface desiccation and simplifies air flow

control. The cover also prevents recharge of the subsurface soils. Excavation is not required, and treatment in and around building foundations can be accomplished. Potential problems with SVE such as short-circuiting due to Site fill materials can be addressed with a flexible design and use of gas piezometers. SVE offers a permanent solution to soils contamination, employs the NCP preference for treatment, does not require long-term operation and maintenance, and does not result in future land use restrictions at the facility. SVE is as protective as other alternatives evaluated in protection of public health and environment. It is the most flexible with respect to implementation and is cost-effective.

A cost comparison of response alternatives is provided in Table 6-7. Detailed cost estimate spreadsheets are provided in Appendix H.

6.8 Stormwater Drainage Redirection Evaluation

A specific AOC requirement was to evaluate the necessity for redirection of stormwater runoff from the Site due to past flooding problems noted for the area. A preliminary stormwater evaluation of the Site and immediate vicinity revealed that stormwater runoff problems have historically existed in the Trousdale area. The preliminary evaluation was discussed in the RA/FI Work Plan, Section 6.0, Stormwater Redirection Evaluation, prepared by EMPE, Inc., July 1991. The drainage problem is attributable to the lack of municipal stormwater drainage sewers or a plan for the Trousdale Drive area, and sediment-clogged stormwater drainage culverts in the area. Based on the small area of the Saad Trousdale Drive Site and minimal topographic relief, the Site contribution to the regional stormwater drainage is negligible. Given that a drainage plan does not exist for the area, any effort to modify the Site topography for stormwater redirection may negatively impact the surrounding businesses or exacerbate the current problem.

Stormwater drainage must be addressed as a function of the specific response alternative chosen for the Site and would be evaluated in design. Stormwater drainage redirection options which will be considered as part of the response alternative design process include the following:

- Excavate the existing trench, now filled with debris, located on the western perimeter of the Site.
- Cover and contour the Site to allow for Site drainage to Trousdale Drive or to the existing municipal sewer system.
- Design and construction of a Site-specific drainage collection and treatment system, if necessary, for final disposal to the existing municipal sewer system.

TABLE 6-7

**RESPONSE ALTERNATIVE
COST ESTIMATE SUMMARY**

TECHNOLOGY	ESTIMATED COST (\$)	COMMENTS
Capping		
Multi-layer cap	1,315,000	<ul style="list-style-type: none"> ● Requires Debris Removal to 10 ft. ● Direct contact barrier; use with SVE
Soil Cover	181,000	
<u>In-situ</u> Bioremediation	400,000	
<u>In-situ</u> Vapor Extraction	995,000	With soil cover
Low Temperature Desorption	3,900,000	Includes stabilization
Excavation and Off-site Disposal		
Secure landfill with no treatment	4,000,000	
Secure landfill with treatment	25,000,000	

7.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

The RA/FI Project Report was developed to present the methods and results of Site activities performed to comply with the April 11, 1990 AOC. All activities were performed with the approval and oversight of U.S. EPA. The following activities were performed.

7.2 Phase I Removal Summary

- Site work was performed from March 1990 to January 1991.
- Liquids and solids were removed from aboveground tanks and sumps and from the Oil/Water Separator System. This resulted in off-site disposal of 144,700 pounds of characteristically hazardous waste and 16,300 gallons of nonhazardous liquids.
- Aboveground vessels were decontaminated on-site, cut up, and sent off-site for metal recycling.

7.3 RA/FI Activity Summary

- Site work was performed from August 22, 1991 through October 18, 1991.
- All surface and subsurface materials and equipment associated with past Site evaluation and operations have been removed for disposal.
- One hundred twenty-one (121) drums of waste were containerized and removed from the Site for waste disposal. Sixteen (16) of these drums contained materials classified as hazardous and were disposed of at approved waste disposal facilities. One hundred five (105) drums were removed and disposed of as nonhazardous waste at a licensed waste disposal facility.
- Sixty (60) cubic yards of construction debris have been removed from the Site.
- Debris segregation produced forty (40) cubic yards of nonhazardous waste removed from the Site for disposal at an industrial landfill.
- Approximately 8,500 gallons of nonhazardous fluids were removed from the Site for disposal at a licensed waste treatment facility.
- All subsurface equipment associated with the oil/water separator was cleaned and

cut as necessary for off-site metal recycling.

- A total of seven borings to bedrock and over 100 feet of trench to a maximum depth of twenty feet were performed for soils/Site evaluation.
- During trenching activities, five (5) drums in varying stages of deterioration were encountered. These drums were removed, sampled, and disposed of at an off-site approved facility.
- Eighteen (18) soil samples were obtained for TAL/TCL analysis.
- Response alternatives to address potential remaining source areas were evaluated to address volatile compound concentrations consistently found above the proposed TISCL. The proposed TISCLs were established as the most appropriate target response levels for this Site.

7.4 Conclusions

- No equipment or materials associated with the initial Site NPL scoring, which indicated potential risk associated with direct contact, remain on-site.
- Investigation of the settling basin area has determined that a geologic sinkhole or collapse feature does not exist.
- Soil sampling results indicate Site soils contamination is primarily limited to ethylbenzene, toluene, xylene and trichloroethene. The detection of the compounds above target response levels is limited to four samples all located on the southwest portion of the Site. Cadmium, lead, and PCB 1248 were detected in single sample locations where their concentrations were above target response levels.
- Although the potential health risk due to soils contamination is minimal, soils remediation for the treatment of volatile organics is appropriate to achieve the response action objectives.
- Saad Site does not contribute significantly to an historical and regional stormwater problem in the Trousdale Drive area.
- SVE is retained as the primary response technology. *In situ* bioremediation and partial excavation are both retained as support technology to be employed as necessary to effect response.

7.5 Recommendations

The following response action recommendations for Site soils have been based upon evaluation of Site data obtained during the performance of the Removal Action/Field Investigation. The response recommendations are:

- Collect additional characterization data through trenching to further identify and delineate Site constituents of concern along the north, south, and western portions of the Site and in those areas where cadmium, lead, and PCB 1248 were detected in single samples above the TRLs.
- Conduct a drum search at the Site in conjunction with the additional Site characterization.
- Retain soil vapor extraction (SVE) as a response action alternative to address Site vadose zone soils. Based on the results of the additional characterization study, further evaluate and define the need to excavate portions of the Site to address metals and PCBs, and further evaluate the efficacy of SVE. Subsequent to the additional characterization study, a SVE pilot test may be performed to demonstrate the efficacy of this technology.
- Incorporate RA/FI data with the additional Site characterization study and potential SVE pilot test to evaluate and select a response action alternative or combination of alternatives that is appropriate for this Site and the level of potential risk it poses to human health and the environment.

These recommendations would be implemented under the schedule provided in the AOC Amendment that is currently being negotiated. An exact schedule and sequence of activities would be detailed in a work plan as provided for in the AOC Amendment.

7.5.1 Additional Site Characterization. The first recommendation of the RA/FI Report is to collect additional Site characterization data to support the evaluation and selection of a response action alternative. Additional data are to be collected to confirm the presence of cadmium, lead, and PCB 1248 in those sample locations where their concentrations were above TRLs. Also, additional data are to be collected along the northern, western, and southern areas of the Site to further characterize the vadose zone soils and delineate the extent of the rubble fill. Trenches would be excavated along the north, south, and western portions of the Site and along

the southern face of the previously excavated OWS.

A conceptual approach to the additional Site characterization is provided below. Details of the sampling plan would be provided in the work plan prepared in accordance with the AOC Amendment.

- Applicable Site sampling protocol, analytical parameters, QA/QC measures, and chain-of-custody procedures will be adopted from the previously approved RA/FI Work Plan and incorporated into the Work Plan.
- Trenches will be excavated and soils samples will be obtained for additional characterization of the Site.
- Trenching and sampling procedures will follow these general guidelines:
 - Trenches will be excavated and sampled at discrete linear intervals to a maximum vertical depth of twenty (20) feet.
 - Composite soil samples will be obtained during trenching activities from specific depth horizons.
 - Confirmation sampling of the PCB and metal anomaly associated with the south face of the former OWS system will be performed using similar trenching and sampling techniques.
 - Free liquids encountered during excavation will be collected for laboratory analysis in a similar method. Trench liquids will be collected for sampling/disposal in designated collection vessels.
- Geotechnical samples may be obtained during the Site characterization at the discretion of the on-site geologist. The geotechnical parameters may include cation exchange capacity, permeability, soil density, moisture content, grain size, pH, porosity, and partition coefficient.
- Lithologic mapping will be performed by the Site geologist during all sampling activities.
- Drums and drum fragments encountered during trenching/sampling activities will be removed, collected, sampled, and treated as necessary for proper disposal.
- All excavated materials (except for any drums or drum fragments) will be replaced in the trenches after sampling has been completed.

7.5.2 Trenching/Drum Search. A second recommendation of the RA/FI Report, developed upon suggestion by USEPA, is to conduct a search for drums that could be present in the subsurface. The drum search would be performed in conjunction with the additional Site characterization. During exploratory trenching conducted during the RA/FI, a total of five (5) drums were encountered over 100 linear feet of trenching. These drums were in various stages of deterioration and contained only minor quantities of material. The spatial orientation and pattern of these drums did not indicate an organized large-scale drum disposal operation that could have occurred in the past.

The trenches excavated for the additional Site characterization will be examined for the presence of drums. If drums (intact or nonintact) are discovered during the trenching operation, their spatial orientation and pattern would be noted prior to removal, sampling, and disposal. Details of the trenching/drum search operations would be provided in the work plan to be developed under the AOC Amendment.

7.5.3 Soil Vapor Extraction System Pilot Test. A third recommendation of the RA/FI Report is to retain SVE as a response action alternative for the *in situ* treatment of vadose zone soils. Based on the results of the additional Site characterization study, a pilot scale soil vapor extraction test study may be performed at the southwest corner of the Site to collect adequate data for assessing the performance of vapor extraction as a response action technology to treat soils. The pilot test would provide performance, cost, and design data for the contingency of a phased expansion of the system to a full-scale treatment operation. Benefits of soil vapor extraction as a response action alternative are as follows:

- Initiates successful treatment of the major containment, volatile organics,
- Eliminates or reduces Site sources that could impact other environmental media.
- The system can be expanded as necessary to remediate other areas,
- Creates subsurface aerobic conditions that enhance the natural biodegradation of less refractory organics such as petroleum hydrocarbons, and
- Provides multimedia treatment of ephemeral perched water, as well as volatile compounds in the vadoze zone soils.

In conjunction with the soil vapor extraction pilot test, a biodegradation treatability study

and a bench scale vapor extraction study are recommended. The biodegradation treatability study would provide information on the indigenous microbial community, their ability to degrade the Site contaminants of concern, and parameters which may enhance the remediation process. The bench scale test would provide a quantitative evaluation of the performance of vapor extraction to achieve TRLs for the Site, as well as some cost and design information. The overall goal of the pilot test and associated treatability studies would be the evaluation of bio-enhanced SVE as a treatment technology for the occurrence of volatile organic, semivolatile organic substances, and TPH at the Site.

The pilot test would be designed to collect data from the two soil horizons identified in the RA/FI Report. Extraction wells would be installed in both the upper backfill zone and the lower native soil zone. Samples would be collected from both zones throughout the test's duration to evaluate the feasibility of vapor extraction as a response action alternative for the Site. Objectives of the pilot test would be:

- Quantify extraction rates of volatile, semivolatile organic substances and TPH compounds from soil at the Site.
- Determine the radius of influence and flow of the vapor extraction wells.
- Utilize a bench scale vapor extraction test to demonstrate the reduction of TPH concentrations on an undisturbed Site soil column, and
- Perform a biodegradation treatability study on two Site soil samples to determine achievable TPH concentration reductions.

The success criteria for the pilot test would be the following:

- Obtain data from the bench scale and pilot scale soil vapor extraction tests sufficient to quantify extraction rates indicating that volatile and semivolatile organic substances along with TPH can be extracted from Site soils,
- Establish consistent and stable extracted vapor flowrates and subsurface vacuum levels from both soil horizons, and
- Demonstrate the ability of the indigenous microbial community to enhance the remediation of the Site soils.

7.5.4 Response Action Alternative Evaluation. A final recommendation of the RA/FI Report is to incorporate the RA/FI data with the data collected during additional Site characterization and potential soil vapor extraction pilot test to further evaluate and select a response action alternative or combination of alternatives that would be appropriate for this Site and its level of potential risk to human health and the environment.

APPENDIX A
SITE CHRONOLOGY BIBLIOGRAPHY

APPENDIX A**Bibliography of Information Reviewed to Construct
SAAD Trousdale Drive Site Chronology**

EPA, Region IV, Potential Hazardous Waste Site Inspection Report, February 13, 1980.

EPA letter from the Chief of Prevention and Special Programs Section to Tennessee Hazardous Waste Site File, July 7, 1980.

ecology and environmental, inc., Decatur, Georgia, letter to Deputy Chief ERB/EPA. Subject: Location of Groundwater Flow-Paths at the Saad Site, Nashville, Tennessee, April 30, 1982.

NUS Corporation, Superfund Division, Draft Sampling Investigation Report Saad Site Nashville, Tennessee, September 9, 1983.

NUS Corporation, Superfund Division, Draft Sampling Investigation Report Saad Site Nashville, Tennessee, October 31, 1983.

Roy F. Weston, Inc., Atlanta, Georgia, Preliminary Assessment and Site Inspection of the Saad Site Trousdale Drive, Nashville, Tennessee, November 5, 1986.

Roy F. Weston, Atlanta, Georgia, Memo from Region IV TAT to EPA OSC, April 15, 1987.

ERB/EERU Draft Geotechnical Investigation Report Saad Site Waste Oil Site, Nashville, Tennessee, August 20, 1987.

EMPE, Inc., Nashville, Tennessee, Work Plan for the Exploratory Excavation of the John P. Saad Site, 3655 Trousdale Drive, Nashville, Tennessee, December 28, 1990.

EMPE, Inc., Nashville, Tennessee, The Exploratory Trenching Investigation of the SAAD Trousdale Drive Site, Nashville, Tennessee, July 2, 1991.

APPENDIX B

SAAD SITE WASTE MANIFEST - 1990/1991

TEEN PARK TX 77536
 Phone 1: (713) 930-2315
 EPA Id: TXD055141378

Date: 11/26/90
 Cust. Nbr: 03623-001
 Order Nbr: 027814

CONOR:
 55 TROUSDALE ROAD SITE
 55 TROUSDALE ROAD
 CHVILLE TN 37211

BILL TO:
 SAAS C/O SMITH, GILL, FISHER & BUT
 1200 MAIN ST, 35TH FLOOR
 ONE KANSAS CITY PLACE
 KANSAS CITY MO 64105

Fact: JIM GRAMM
 ne: (404) 934-1180-

Cust. EPA Id: TND065833543

Der	Suf	H	Proper Shipping Name	Load Qty	Pickup Qty	Cont Type
233	23	X	NO HAZARDOUS WASTE LIQUID NOS (METHYLENE CHLORIDE, TOLUENE, TRICHLOROETHENE, FLUOROCIFEN & UNKNOWN ALKANES), GRM-E, NA 7109, PLACARD: NONE NFPA FIRE CODE CLASS IC D001 D018 D019 D028 D032 D033 D038 D043	24 X 55.00	24.00	55S0
233	23	X	NO HAZARDOUS WASTE LIQUID NOS (METHYLENE CHLORIDE, TOLUENE, PHENOL, BENZYL ALCOHOL & UNKNOWN ALKYL DINITRILE), GRM-E NA 7109, PLACARD: NONE NFPA FIRE CODE CLASS IB D001 D006 D007 D008 D026 D036 D038	56 X 55.00	56.00	55S0

on #1 - I certify that the above named materials are properly described and per conditioning for transportation according to regulations of all governing

Certification #2 - Received the above materials subject to tariffs and/or contract in effect on date of issuance hereof.

on #3 - If this shipment is to be delivered to the consignee without recourse signor, the consignor shall sign the following statement "The carrier shall not ery of this shipment without payment of freight and all other charges."

Certification #4 - Received the above described property in good condition except as noted.

Driver: Charles Dotter No. 479266

led Pickup Dates: 11/28/90 Time: 09:00

1: CHARLES DOTTER
 2: EUGENE STAFFORD
 3: T/E Type Equip: VAN
 4: _____
 5: _____
 6: _____
 Loc: _____

Tractor: 179266
 Trailer: 0003V
 Decal: _____
 Gross Wt: _____
 Tare Wt: _____
 Net Wt: _____

Date/Time
 Arrive RES: _____
 Depart RES: _____
 Arrive Cust: 11-28-90 11:00 PM
 Depart Cust: 11-28-90 3:15 PM
 Return RES: 11-29-90 10:00 AM
 Depart RES: 11-29-90 12:00 PM

Series Description Bill

Billable Overnight Layover: _____
 Billable Delay Hours: _____
 SIN Spotted: _____ Picked up: _____
 Explain Delay: _____

Instructions: _____



UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. Manifest Document No. TND-065-833543100003		2. Page 1 of 1 Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address SAAD TROUSDALE RD, SITE 3655 TROUSDALE RD. NASHVILLE, TN. 37211				A. State Manifest Document Number NO-00553056		
4. Generator's Phone (615) 941-1283 ATTN: Ellis Saad				B. State Generator's ID		
5. Transporter 1 Company Name CUSTOM ENVIRONMENTAL TRANSPORT				C. State Transporter's ID 40756		
6. US EPA ID Number D.E.09.8.09.1.88.5.6				D. Transporter's Phone 303-579-2761		
7. Transporter 2 Company Name				E. State Transporter's ID 713-930-4500		
8. US EPA ID Number				F. Transporter's Phone		
9. Designated Facility Name and Site Address (TX) ROLLINS ENVIRONMENTAL SERVICE, INC. 2027 BATTLEGROUND RD. DEER PARK, TX. 77537-0600 TX D.O.5.5.1.4.1.37.8				G. State Facility's ID 50089		
10. US EPA ID Number				H. Facility's Phone 713-930-2345		
11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol	15. Waste No.
	a. HAZARDOUS WASTE Liquid NOS ORM-E NA-9189 - D001, D018, D019, D028, D032, D033, D038, D043	024	DM	2000	P	952310
	b. HAZARDOUS WASTE Liquid NOS ORM-E NA-9189 - D001, D006, D007, D008, D026, D036, D038	056	DM	28000	P	952310
	c.					
	d.					
J. Additional Descriptions for Materials Listed Above EMERGENCY # (404) 934-1180 ATTN: Jim Graham				K. Handling Codes for Wastes Listed Above HO-48288 HO-48289 101		
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name Ellis SAAD		Signature [Signature]		Month Day Year 11/2/90		
17. Transporter 1 Acknowledgement of Receipt of Materials						Date
Printed/Typed Name EUGENE STAFFORD		Signature [Signature]		Month Day Year 11/28/90		
18. Transporter 2 Acknowledgement of Receipt of Materials						Date
Printed/Typed Name		Signature		Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.						
Printed/Typed Name RES (TX) INC KOFI OPOKUN		Signature [Signature]		Month Day Year 11/2/0890		

810 28 2

CONSIGNOR:

SAAD TROUSDALE ROAD
3655 TROUSDALE ROAD

NASHVILLE

TN 37211

BILL TO:

SAAD C/O SMITH, GILL, FISHER & BUT
1200 MAIN ST, 35TH FLOOR
ONE KANSAS CITY PLACE
KANSAS CITY MO 64105

28 0190

Stream Number	Surf	H	Proper Shipping Name	Load Qty Pickup Qty	Cont Type
048289	23	X	RG HAZARDOUS WASTE LIQUID NOS (METHYLENE CHLORIDE, TOLUENE, PHENOL, BENZYL ALCOHOL & UNKNOWN ALKYL DINITRILE), ORM-E MA 9189, PLACARD: NONE NFPA FIRE CODE CLASS IS 0001 0006 0007 0008 0026 0036 0038	80.00 55SD	

ication #1 - I certify that the above named materials are properly described and proper conditioning for transportation according to regulations of all governing

gnor

ication #3 - If this shipment is to be delivered to the consignee without recourse : consignor, the consignor shall sign the following statement "The carrier shall not delivery of this shipment without payment of freight and all other charges."

gnor

Certification #2 - Received the above materials subject to tariffs and/or contract in effect on date of issuance hereof.

Driver

No.

Certification #4 - Received the above described property in good condition except as noted.

Consignee



UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
Generator's Name and Mailing Address Ellis Sand		Sacul Truscate Rd Site 3655 Truscate Rd Nashville, TN 37211		A. State Manifest Document Number No 00238896		
4. Generator's Phone (615) 941-1283		6. US EPA ID Number		B. State Generator's ID		
5. Transporter 1 Company Name Technical Transporters Inc.		7. Transporter 2 Company Name CUSTOM ENVIRONMENTAL TRANSPORT		C. State Transporter's ID 41554		
8. US EPA ID Number		9. Designated Facility Name and Site Address Kellins Environmental Service Inc, 2027 Battleground Rd, Deer Park, TX 77537-0600		D. Transporter's Phone 1600 962 1667		
10. US EPA ID Number		11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		E. State Transporter's ID 40756		
12. Containers		13. Total Quantity		F. Transporter's Phone (713) 930-4500		
14. Unit		15. Waste No.		G. State Facility's ID 50089		
16. Facility's Phone		17. Containers		H. Facility's Phone 713-930-2345		
18. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		19. Containers		I. Waste No.		
a. Hazardous waste Liquid NOS ORM-E NA-9189 - D001, D006, D007, D008 D026, D036, D038		0.75 DM 37500 P		952310		
b.						
c.						
d.						
Additional Descriptions for Materials Listed Above Emergency # 404-934-1180 Attn: Jim Graham		K. Handling Codes for Wastes Listed Above HO 48289 (67)				
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name Ellis J. Sand		Signature Ellis Sand		Month Day Year 1/11/91		
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature R. Y. Wimer		Date 1/11/91		
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature Shirley Carroll		Date 01/11/91		
19. Discrepancy Indication Space						
Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.						
Printed/Typed Name Douglas Moore		Signature Douglas Moore		Date 01/12/91		

1610
28
0191

DEER PARK

TX 77536

Date : 10/22/90

Phone : (713) 930-2315

Cust. Nbr: 03623-001

EPA ID: TXD05514372

Order Nbr: 026730

CONSIGNOR:
D. TROUSDALE ROAD SITE
3655 TROUSDALE ROAD

NASHVILLE

TN 37211

BILL TO:

SAAD C/O SMITH, GILL, FISHER & BUT
1200 MAIN ST, 35TH FLOOR
ONE KANSAS CITY PLACE
KANSAS CITY MO 64105

Contact: JIM GRAHAM

Phone : (404) 934-1130-

Cust. EPA ID: TXD065133542

Stream Number	Suf	Proper Shipping Name	Load Qty	Cc
048281	23	X RG HAZARDOUS WASTE LIQUID NOS (METHYLENE CHLORIDE, TOLUENE, TRICHLOROETHENE, FLUORODIFEN & UNKNOWN ALKANES), ORN-E, NA 9129, PLACARD: NONE NFPA FIRE CODE CLASS IC DOC1	59	55SD
47604		ZQ HAZARDOUS WASTE LIQUID NOS ORN-E NA-9189	21	55S.

00553057

59X55gal 510

21X55gal 510 Load Dropped at Transfer Yard

ation #1 - I certify that the above named materials are properly described and proper conditioning for transportation according to regulations of all governing

Certification #2 - Received the above materials subject to tariffs and/or contract in effect on date of issuance hereof.

for Jim D. Smith

Driver Greg Lamer No. 102490

ation #3 - If this shipment is to be delivered to the consignee without recourse consignor, the consignor shall sign the following statement "The carrier shall not delivery of this shipment without payment of freight and all other charges."

Certification #4 - Received the above described property in good condition except as noted.

for Jim D. Smith

Consignee 10/25/90

Scheduled Pickup Date: 10/24/90

Time: 03:00

iver 1 : George
iver 2 : George
rrier : CET Type Equip: VAN
acard 1 :
acard 2 :
ale Loc :

Tractor : 5664P
Trailer : 287
Decal :
Gross Wt :
Tare Wt :
Net Wt :

Arrive RES : 10-23-90 07:00
Depart RES :
Arrive Cust : 014-0000
Depart Cust :
Return RES :
Depart RES :

cessories
e Description

Billable Overnight Layover :
Billable Delay Hours :
BIN Spotted :
Explain Delay :
Picked up :

iver Instructions:

BE ON TIME WILL HAVE CREW WAITING

ACCOUNTING COPY



UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address SAND TROUSDALE RD. SITE 3655 TROUSDALE RD. NASHVILLE, TN. 37211		TND-065833543100002		A. State Manifest Document Number NO 00553057			
4. Generator's Phone (615) 941-1283		ATTN: Ellis Snad		B. State Generator's ID			
5. Transporter 1 Company Name CUSTOM ENVIRONMENTAL TRANSPORT		6. US EPA ID Number DE0990919858		C. State Transporter's ID 407561			
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 302-479-2761			
9. Designated Facility Name and Site Address ROLLINS ENVIRONMENTAL SERVICE, INC 2027 BATTLE GROUND RD. DEER PARK, TX. 77537-0600		10. US EPA ID Number TXD055141378		E. State Facility's ID 5008921A			
				F. Facility's Phone 713-930-2345			
11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)			12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
X	a. HAZARDOUS WASTE Liquid NOS ORM-E #NA-9189, D-001, D-019, D-019, D-028, D-033, D-033, D-038, D-043			102	DM	25.200 P	952310
X	b. HAZARDOUS WASTE Liquid NOS ORM-E #NA-9199, F-001, F-002, F-003, F-005, D-001, D-004, D-006, D-007, D-019, D-035			021	DM	0.8400 P	952310
	c.						
	d.						
J. Additional Descriptions for Materials Listed Above ACCESSION NUMBER (404) 934-1130				K. Handling Codes for Wastes Listed Above HO 48288 HO 47604			
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name Ellis Snad		Signature 		Month Day Year 11 02 88			
17. Transporter 1 Acknowledgement of Receipt of Materials							
Printed/Typed Name GREGORY LAMBERT		Signature 		Month Day Year 11 02 88			
18. Transporter 2 Acknowledgement of Receipt of Materials							
Printed/Typed Name		Signature		Month Day Year			
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.							
Printed/Typed Name TARA MILUM		Signature 		Month Day Year 11 02 88			

ROLLINS ENVIRONMENTAL SERVICES (TX) INC
BATTLEGROUND ROAD

BILL OF LADING NUMBER
121215

DEER PARK TX 77536
Phone: (713) 930-2315
EPA Id: TXD055141378

Date: 10/15/90
Cust. Nbr: 03623-001
Order Nbr: 036737

SIGNOR:
SAAD TROUSDALE ROAD SITE
3655 TROUSDALE ROAD
NASHVILLE TN 37211

BILL TO:
SAAD C/O SMITH, GILL, FISHERBUT
1200 MAIN ST, 35TH FLOOR
ONE KANSAS CITY PLACE
KANSAS CITY MO 64105

Contact: JIM GRAHAM
Phone: (404) 934-1180- Cust. EPA Id: TND065233543

Stream Number	Sub	Proper Shipping Name	Load Qty	Con. Type
042282	23	HAZARDOUS WASTE LIQUID NOS (METHYLENE CHLORIDE, TOLUENE, TRICHLOROETHENE, FLUORODIFEN & UNKNOWN ALKANES), ORW-E, NA 9189, PLACARD: NONE NFPA FIRE CODE CLASS IC 00C1	20.00	SSSD

Certification #1 - I certify that the above named materials are properly described and in proper conditioning for transportation according to regulations of all governing laws.
signor X Jim M. Kelly
Certification #3 - If this shipment is to be delivered to the consignee without recourse from the consignor, the consignor shall sign the following statement "The carrier shall not be responsible for the delivery of this shipment without payment of freight and all other charges."
signor X Jim M. Kelly

Certification #2 - Received the above materials subject to the above conditions, tariffs and/or contract in effect on date of issuance hereof.
Driver Guys Lawrence No. 10-172
Certification #4 - Received the above described property in good condition except as noted.
Consignee [Signature] 10/26/90

Scheduled Pickup Date: 10/17/90 Time: 14:00

Driver 1: George
Driver 2: Cat
Carrier: Cat Type Equip: VAN
Placard 1: HAZ
Placard 2: HAZ
File Loc: HAZ

Tractor: 56626 Arrive RES: 10-17 16:00
Trailer: 2002 Depart RES: 17:00
Decal: HAZ Arrive Cust: 10-17 13:00
Gross Wt: HAZ Depart Cust: 17:00
Tare Wt: HAZ Return RES: HAZ
Net Wt: HAZ Depart RES: 10:00

Accessories: HAZ
Bill Description: HAZ Bill: HAZ
BIN Spotted: HAZ Picked up: HAZ
Explain Delay: HAZ

Driver Instructions: BE ON TIME, A CREW WILL BE WAITING

ACCOUNTING COPY



UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No. T N 0 0 6 5 8 3 3 5 4 3 1 0 0 0 1	Manifest Document No. 100001	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.		
3. Generator's Name and Mailing Address Ellis Saad 3655 Trousdale Rd Site Nashville, TN 37211				A. State Manifest Document Number NO 00553058			
4. Generator's Phone (615) 776-1283				B. State Generator's ID N/A			
5. Transporter 1 Company Name Custom Environmental Transport		6. US EPA ID Number DE 0 9 8 0 9 1 8 8 5 8		C. State Transporter's ID 40756			
7. Transporter 2 Company Name		8. US EPA ID Number		D. Transporter's Phone 302-479-2761			
9. Designated Facility Name and Site Address (TX) Rollins Environmental Service Inc. 2027 Battle Ground Rd Deer Park, TX 77537-0609				E. State Transporter's ID N/A			
10. US EPA ID Number TX D 0 5 5 1 4 1 3 7 8				F. Transporter's Phone N/A			
G. State Facility's ID 50089				H. Facility's Phone 713-930-2345			
11A. HM	11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	1. Waste No.	
X	a. Hazardous Waste Liquid NOS ORM-E		00001 D001 NA# 9189	084 DM	33600 P	952310	
	b.						
	c.						
	d.						
J. Additional Descriptions for Materials Listed Above Emergency number 404 934 1180				K. Handling Codes for Wastes Listed Above HO 48288 (707)			
15. Special Handling Instructions and Additional Information							
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.							
Printed/Typed Name Ellis Saad			Signature <i>Ellis Saad for Enact</i>		Month Day Year 08/17/90		
17. Transporter 1 Acknowledgement of Receipt of Materials			Signature <i>George J. Lombard</i>		Date Month Day Year		
Printed/Typed Name George J. Lombard			Signature <i>George J. Lombard</i>		Month Day Year		
18. Transporter 2 Acknowledgement of Receipt of Materials			Signature		Date		
Printed/Typed Name			Signature		Month Day Year		
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.							
Printed/Typed Name Joe Kappel			Signature <i>Joe Kappel</i>		Date Month Day Year 10/26/90		

280195

THANK YOU!!!



REMIT TO:
OSCO, INC.
DEPT. 7
P.O. BOX 305172
NASHVILLE, TN 37230-5172

INVOICE NO. 19965
INVOICE DATE 08/31/90

2 8 0197

BILL OF LADING

B/L DATE

MANIFEST

GENERATOR:

BILL TO: [367400]

DISPOSAL SITE:

ENSITE
5203 SOUTH ROYAL ATLANTA DR.
TUCKER, GA 30084

SHIPPED VIA	TRUCK #/TRAILER #	TERMS
Delivered	Origin	Net 20 Days
PURCHASE ORDER NUMBER	SALESPERSON	QUOTE #/PROFILE #
Verbal		

DESCRIPTION	QUANTITY	UNIT PRICE	EXTENDED PRICE
Equipment Rental	1.0	1000.000	1000.00
SEP 2 1 1990			
SEP 2 1 1990			
NonTaxable Subtotal:			1000.00
Taxable Subtotal:			.00
Tax:			.00
Total:			1000.00

ORIGINAL COPY

THANK YOU!



REMIT TO:
OSCO, INC.
DEPT. 7
P.O. BOX 305172
NASHVILLE, TN 37230-5172

2 8 0198

INVOICE NO. 19789

INVOICE DATE 08/31/90

BILL OF LADING 90833

B/L DATE 08/21/90

MANIFEST

GENERATOR:

ELLIS SAAD
3655 TROUSDALE ROAD
NASHVILLE, TN 37211

BILL TO:

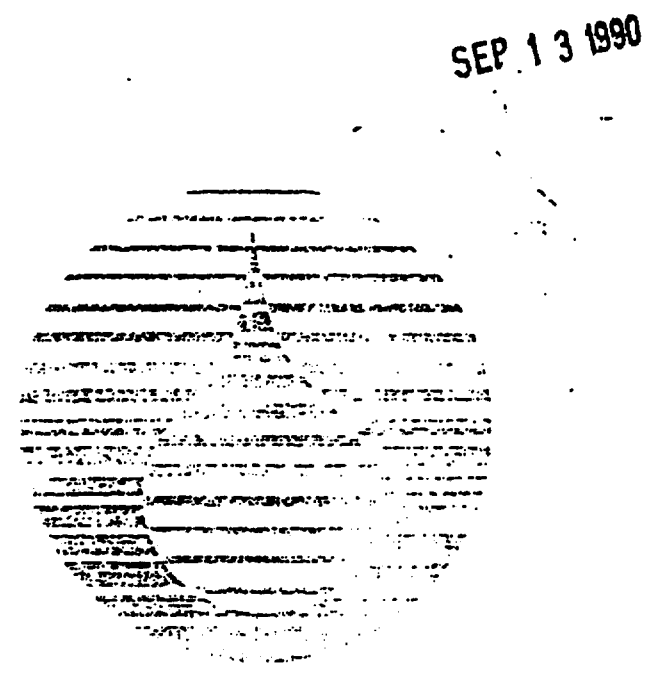
[367400]

ENSITE
5203 SOUTH ROYAL ATLANTA DR.
TUCKER, GA 30084

DISPOSAL SITE:

OSCO INC
208 SANTA FE PIKE
COLUMBIA, TN 38401

SHIPPED VIA	TRUCK # / TRAILER #	TERMS
OSCO, INC.	3004 / 507	Net 20 Days
PURCHASE ORDER NUMBER	SALESPERSON	QUOTE # / PROFILE #
ROBERT OHARA		4541 08/21/90 10241 08/21/90

DESCRIPTION	QUANTITY	UNIT PRICE	EXTENDED PRICE
Transportation	1.0	300.000	300.00
Disposal of Waste Water	4500.0	.300	1350.00
			
NonTaxable Subtotal			1650.00
Taxable Subtotal			.00
Tax			.00
Total			1650.00

ORIGINAL COPY

THANK YOU!



REMIT TO:
OSCO, INC.
DEPT. 7
P.O. BOX 305172
NASHVILLE, TN 37230-5172

2 8 0199

INVOICE NO. 19790

INVOICE DATE 08/31/90

BILL OF LADING 90835

B/L DATE 08/21/90

MANIFEST

SEP 13 1990

GENERATOR:

ELLIS SAAD
3655 TROUSDALE ROAD
NASHVILLE, TN 37211

BILL TO:

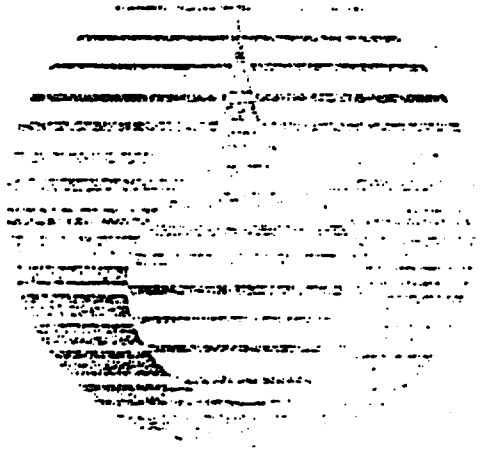
[367400]

ENSITE
5203 SOUTH ROYAL ATLANTA DR.
TUCKER, GA 30084

DISPOSAL SITE:

OSCO INC
208 SANTA FE PIKE
COLUMBIA, TN 38401

SHIPPED VIA	TRUCK #/TRAILER #	TERMS
OSCO, INC.	3004 / 507	Net 20 Days
PURCHASE ORDER NUMBER	SALESPERSON	QUOTE #/PROFILE #
ROBERT O HARA		4541 08/21/90 10241 08/21/90

DESCRIPTION	QUANTITY	UNIT PRICE	EXTENDED PRICE
Transportation	1.0	300.000	300.00
Disposal of Waste Water	5000.0	.300	1500.00
SEP 13 1990			
			
NonTaxable Subtotal			1800.00
Taxable Subtotal			.00
Tax			.00
Total			1800.00



REMIT TO:
OSCO, INC.
DEPT. 7
P.O. BOX 305172
NASHVILLE, TN 37230-5172

2 8 0200

INVOICE NO. 19788

INVOICE DATE 08/31/90

BILL OF LADING 90832

B/L DATE 08/21/90

MANIFEST

GENERATOR:

ELLIS SAAD
3655 TROUSDALE ROAD
NASHVILLE, TN 37211

BILL TO:

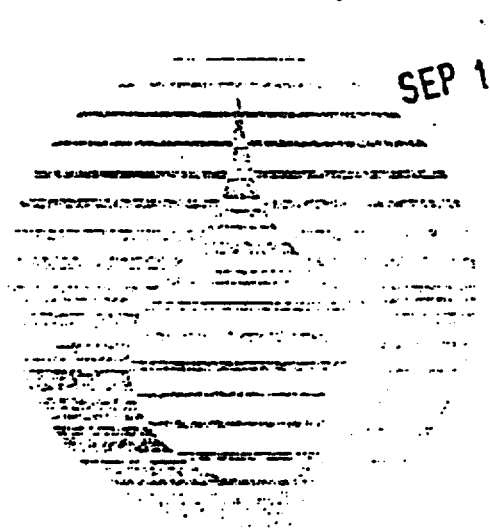
[367400]

ENSITE
5203 SOUTH ROYAL ATLANTA DR.
TUCKER, GA 30084

DISPOSAL SITE:

OSCO INC
208 SANTA FE PIKE
COLUMBIA, TN 38401

SHIPPED VIA	TRUCK # / TRAILER #	TERMS
OSCO, INC.	3004 / 1710	Net-20 Days
PURCHASE ORDER NUMBER	SALESPERSON	QUOTE # / PROFILE #
ROBERT OHARA		4541 08/21/90 10241 08/21/90

DESCRIPTION	QUANTITY	UNIT PRICE	EXTENDED PRICE
Transportation	1.0	300.000	300.00
Disposal of Waste Water	2000.0	.300	600.00
isc. Charge for Trailer Rinse	1.0	35.000	35.00
			
NonTaxable Subtotal			935.00
Taxable Subtotal			.00
Tax			.00
Total			935.00



REMIT TO:
OSCO, INC.
DEPT. 7
P.O. BOX 305172
NASHVILLE, TN 37230-5172

2 8 0201

INVOICE NO. 19686

INVOICE DATE 08/31/90

BILL OF LADING 90834

B/L DATE 08/21/90

MANIFEST

GENERATOR:

ELLIS SAAD
3655 TROUSDALE ROAD
NASHVILLE, TN 37211

BILL TO: [367400]
ENSITE
5203 SOUTH ROYAL ATLANTA DR.
TUCKER, GA 30084

DISPOSAL SITE:
OSCO INC
208 SANTA FE PIKE
COLUMBIA, TN 38401

SEP 10

SHIPPED VIA	TRUCK # / TRAILER #	TERMS
OSCO, INC.	/507	Net 20 Days
PURCHASE ORDER NUMBER	SALESPERSON	QUOTE # / PROFILE #
ROBERT O HARA		4541 08/21/90 10241 08/21/90

DESCRIPTION	QUANTITY	UNIT PRICE	EXTENDED PRICE
Transportation	1.0	300.000	300.00
Disposal of Waste Water	4800.0	.300	1440.00
Misc. Charge for Trailer Rinse	1.0	35.000	35.00
<div>3231</div>			
NonTaxable Subtotal			1775.00
Taxable Subtotal			00.00
Tax			00.00
Total			1775.00

ORIGINAL COPY

THANK YOU!



Waste Management of TN - Nashville

P. O. Box 17915
1428 Antioch Pike
Nashville, TN 37217

2 8 0202 525284

SERVICE TICKET AGREEMENT/NON-HAZARDOUS WASTES

DIVISION NUMBER ACCOUNT NUMBER SERVICE TYPE *Ro*

CUSTOMER *Fair Seasons*

ADDRESS *3655 Tinsdale DR*

CITY *Nash TN*

ORDER NUMBER		SERVICE DATE	
		<i>8-27-91</i>	
TIME IN		TIME OUT	
<i>243</i>			
ROUTE ID	DISPOSAL ID	DISPOSAL TICKET	
<i>429</i>	<i>Na</i>		
SIGNATURE		COD AMOUNT	

ACTION	ORD QTY	SERVICE DESCRIPTION	WASTE TYPE	BILL CODE	MEASURE	BILL QUANTITY	AMOUNT
<i>PL</i>	<i>1</i>	<i>20yd trash</i>					

COMMENTS

SERVICES ACCEPTED SUBJECT TO THE TERMS AND CONDITIONS ON THE REVERSE SIDE AND PAYMENT AGREED TO BE MADE IN ACCORDANCE WITH THE CONTRACTOR'S CURRENT RATE SCHEDULE

CUSTOMER SIGNATURE *Harry East* CONTRACTOR SIGNATURE *[Signature]*

0038TBK (10/90) WHITE - OFFICE YELLOW - CUSTOMER PINK - CONTROL Printed on recycled paper



Waste Management of TN - Nashville

P. O. Box 17915
1428 Antioch Pike
Nashville, TN 37217

525293

SERVICE TICKET AGREEMENT/NON-HAZARDOUS WASTES

DIVISION NUMBER ACCOUNT NUMBER SERVICE TYPE *Ro*

CUSTOMER *Fair Seasons*

ADDRESS *3655 Tinsdale Ave*

CITY *Nash TN*

ORDER NUMBER		SERVICE DATE	
		<i>8-28-91</i>	
TIME IN		TIME OUT	
<i>314</i>		<i>427</i>	
ROUTE ID	DISPOSAL ID	DISPOSAL TICKET	
<i>429</i>	<i>Na</i>	<i>0154214</i>	
SIGNATURE		COD AMOUNT	

ACTION	ORD QTY	SERVICE DESCRIPTION	WASTE TYPE	BILL CODE	MEASURE	BILL QUANTITY	AMOUNT
<i>PL</i>	<i>1</i>	<i>20yd trash</i>					

COMMENTS

SERVICES ACCEPTED SUBJECT TO THE TERMS AND CONDITIONS ON THE REVERSE SIDE AND PAYMENT AGREED TO BE MADE IN ACCORDANCE WITH THE CONTRACTOR'S CURRENT RATE SCHEDULE

CUSTOMER SIGNATURE *Harry East* CONTRACTOR SIGNATURE *[Signature]*

0038TBK (10/90) WHITE - OFFICE YELLOW - CUSTOMER PINK - CONTROL Printed on recycled paper

**FOUR SEASONS INDUSTRIAL SERVICES, INC.**

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8 0203

Nº 14729

NON-HAZARDOUS WASTE MANIFEST

Manifest #

F.S.I.S. JOB #

Date: 8-27-91

Generator:

LS SAAD Site

Phone No.: _____

3655 Treadwell DriveEPA ID No.: TNDC65833543Nashville TNContact: Joe Pezman of
Robert DAWID

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date

8-27-91

Signature

J. J. Pezman

Description of waste	Circle Form Solid Liquid Gas Sludge	Quantity	Circle Units Gallons Cu. Yds Pounds Tons	Container	
				No.	Type
<u>Construction Debris</u> <u>(Asphalt)</u>	<u>Solid</u>	<u>20</u>	<u>Gallons</u> <u>Cu. Yds</u> <u>Pounds</u> <u>Tons</u>	<u>1</u>	<u>RO</u>

Transporter:

North Carolina

Unit Number(s) _____

1408 Ashback PikePhone No.: 831-9600Nashville TN 37217

EPA ID No.: _____

Vehicle License Tag Number(s) _____

Container: _____

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature

Date

Delivering Driver's Signature

Date

Facility:

Metro Landfill

Phone No.

862-86401400 County Hospital RdMary D/abNashville TN

Contact: _____

Handling Method: _____

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of _____ to handle this material.

Date

Signature: _____



Waste Management of TN - Nashville

P. O. Box 17915
1428 Antioch Pike
Nashville, TN 37217

525288

SERVICE TICKET AGREEMENT/NON-HAZARDOUS WASTES

VISION NUMBER ACCOUNT NUMBER SERVICE TYPE *Ro*

CUSTOMER *Four Seasons*

ADDRESS *3655 Transdale Ave*

CITY *Nash TN*

ORDER NUMBER		SERVICE DATE	
<i>DE</i>		<i>8-28-91</i>	
TIME IN		TIME OUT	
<i>859</i>		<i>955</i>	
ROUTE ID	DISPOSAL ID	DISPOSAL TICKET	
<i>429</i>	<i>DE</i>	<i>DE</i>	
SIGNATURE		COD AMOUNT	

ST	ORD QTY	SERVICE DESCRIPTION	WASTE TYPE	BILL CODE	MEASURE	BILL QUANTITY	AMOUNT
<i>DE</i>	<i>1</i>	<i>20 yd</i>					

COMMENTS

SERVICES ACCEPTED SUBJECT TO THE TERMS AND CONDITIONS ON THE REVERSE SIDE AND PAYMENT AGREED TO BE MADE IN ACCORDANCE WITH THE CONTRACTOR'S CURRENT RATE SCHEDULE.

CUSTOMER SIGNATURE *[Signature]* CONTRACTOR SIGNATURE *[Signature]*

MS-0038TBK (10/90)

WHITE - OFFICE

YELLOW - CUSTOMER

PINK - CONTROL

Printed on recycled paper

**FOUR SEASONS INDUSTRIAL SERVICES, INC.**

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8 0205

N^o 10370**NON-HAZARDOUS WASTE MANIFEST**

Manifest #

F.S.I.S. JOB #

Date: 8-28-91Generator: L. S. SAAD SILE

Phone No.: _____

3855 Trousdale DrEPA ID No.: TND065833543Nashville TNContact: JOE PUTMAN / OR
Robert Darwin

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date 8/28/91Signature Joe E. Putman

Description of waste	Circle Form Solid Liquid Gas Sludge	Quantity	Circle Units Gallons Cu. Yds. Pounds Tons	Container	
				No.	Type
<u>Construction Debris</u> <u>(Concrete)</u>	<u>Solid</u>	<u>20</u>	<u>Gallons</u>	<u>1</u>	<u>20</u>

Transporter: Waste Management

Unit Number(s) _____

1428 Antioch PikePhone No.: 831-9600Antioch TN 37217

EPA ID No.: _____

Vehicle License Tag Number(s) _____

Container: _____

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature [Signature]Date 8-28-91

Delivering Driver's Signature _____

Date _____

Facility: Metro Co. LandfillPhone No. 862-86401400 County Hospital RdNashville TNContact: [Signature]

Handling Method: _____

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of _____ to handle this material.

Date 8-28-91Signature: [Signature]



Waste Management of TN - Nashville

P. O. Box 17913
1428 Antioch Pike
Nashville, TN 37217

525296

SERVICE TICKET AGREEMENT/NON-HAZARDOUS WASTES

DIVISION NUMBER	ACCOUNT NUMBER	SERVICE TYPE
CUSTOMER	Ro	
ADDRESS	Fairly Reservoir	
CITY	3655 Transdale DR.	
	Nash TR	

ORDER NUMBER		SERVICE DATE	
		8-29-91	
TIME IN		TIME OUT	
823			
ROUTE ID	DISPOSAL ID	DISPOSAL TICKET	
429	WRP		
SIGNATURE		COD AMOUNT	

AI	ORD QTY	SERVICE DESCRIPTION	WASTE TYPE	BILL CODE	MEASURE	BILL QUANTITY	AMOUNT
11X	1	20 yd road					

COMMENTS

SERVICES ACCEPTED SUBJECT TO THE TERMS AND CONDITIONS ON THE REVERSE SIDE AND PAYMENT AGREED TO BE MADE IN ACCORDANCE WITH THE CONTRACTOR'S CURRENT RATE SCHEDULE

CUSTOMER
SIGNATURECONTRACTOR
SIGNATURE

CIMS-0038TBK (10/90)

WHITE - OFFICE

YELLOW - CUSTOMER

PINK - CONTROL

Printed on recycled paper

**FOUR SEASONS INDUSTRIAL SERVICES, INC.**

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8 0207
N^o 10371

NON-HAZARDOUS WASTE MANIFEST

Manifest #

F.S.I.S. JOB #

Date: 8-29-91Generator: L & BAAH Inc

Phone No.: _____

3155 Tenthredine Dr

EPA ID No.: _____

Nashville, TNContact: Joe Putman / Joe
Robert Dawson

Process which generated waste: _____

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date 8/29/91Signature Joe T. Putman

Description of waste	Circle Form	Quantity	Circle Units	Container	
				No.	Type
<u>wood pallets</u>	<u>Solid</u> Liquid Gas Sludge	<u>20</u>	Gallons <u>cu. Yds</u> Pounds Tons	<u>1</u>	<u>RO</u>

Transporter: Waste Management

Unit Number(s) _____

1432 Ashcroft AvePhone No.: 831-9600Ashcroft TN 37217

EPA ID No.: _____

Vehicle License Tag Number(s) _____

Container: _____

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature _____

Date _____

Delivering Driver's Signature _____

Date _____

Facility: Wright IncPhone No. 793-710178 Buchanan StLovette TN 37086

Contact: _____

Handling Method: Recycle

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of TN to handle this material.

Date _____

Signature: _____

2 8 0208

OCT-11-1991 9:30

FROM BFI HOUSTON LAB

TO MIDDLE POINT

P.003/003

HOUSTON
LABORATORY

BROWNING-FERRIS INDUSTRIES

DATE	10/11/91
BY LOCATION	BFI MIDDLE POINT
BY LOCATION	HERRING, V
CONTRACT	1-25872
GENERATOR LOCATION	WASHVILLE, TN
WASTE DESCRIPTION	CONSTRUCTION DRENCH
BYE END NUMBER	1-25872

PRETREATMENT & DISPOSAL RECOMMENDATION

Safety Precautions : Avoid Skin & Eye Contact

RECOMMENDED:

Direct Landfill Burial: Amount of Original Waste 100% by vol.

Sanitary.. BFI Middle Point

** See attached analysis

Comments:

Mix the waste with refuse at the active face of the landfill. Approved for one time only disposal. See the attached Chain of Custody, site history, and analytical data from Specialized Assays as received by the BFI Houston Lab.

Also see the letter from the generator dated October 8, 1991, and page 2 copy of the WCD as addenda to the WCD.

Forward the letter and page 2 of the WCD to the Houston Lab within ten days for the Waste Code Number to remain valid.

The above is a recommendation of the BFI Houston Laboratory Group. It must be understood that management of the waste for treatment and/or disposal at the designated facility must be in compliance with the facility's permit and applicable federal, state, and local regulations. The waste treatment and/or disposal recommendation is based upon a review of the information provided by the generator. This recommendation is contingent upon the receipt at the treatment and/or disposal facility of a waste material essentially equivalent in chemical composition and physical properties to that as defined above. This waste stream has been assigned BFI Waste Code: TH/842/921010/75872

W. J. Beasley
10/11/91

BFI HOUSTON LAB GROUP

Diana L. Lasco
Diana L. Lasco
Technical Representative

CC: Doc Nyiro

2 8 0209

PROFILE # SAI-004

<u>DRUM #</u>	<u>CONTENTS</u>
KW-01	Carbon
KW-02	Carbon
KW-03	Carbon
KW-05	Sand
KW-08	Sand
KW-09	Carbon
KW-10	Sand
KW-11	Sand
KW-12	"
KW-13	"
KW-14	Carbon
KW-15	Sand/Carbon
KW-17	" "
KW-20	Carbon
KW-21	Sand
KW-22	Sand/Carbon
KW-23	Sand
KW-24	Carbon
KW-25	"
KW-26	Sand/Carbon
KW-27	Sand
KW-28	"
KW-61	Sand/Carbon
KW-62	" "
KW-63	" "
KW-65	Carbon
KW-66	Carbon
KW-67	"
KW-68	"
KW-69	"

Container Contents

ARF No. 2 8 0210

☒ Bulk

☐ Mixed Lab

Container Number: 10119196 SAJ-01-30		Chemist: JJM
JOT Shipping Name: Non-regulated material		596 597 598
Container Type: 12H55 (except SAJ-06: 850P)	UN/NA Number:	HM
Hazard Class:		

Receiving	Routing	Shipping

Line No.	Material Description	Liquid Solid	Material Quantity	RQ	EPA Waste Code Number
01	Waste stream	S	30 x 300 P		NONE
02	SAJ-004				
03					
04	Sand 10-100%				
05	lebris 0-10%				
06	carbon 10-100%				
07					
08	QC 01 99% solid				
09	1% liquid (no free liquid, sand moist)				
10	pH = 7				
11					
12	02 identical to above drum				
13					
14	26 drum 1/2 full sand				
15	pH = 7				
16					
17					
18	* many of these drums				
19	feel only partially full				
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					

This Lab Pack list continues;

Yes ☐

No ☐

This is page ____ of ____

**FOUR SEASONS INDUSTRIAL SERVICES, INC.**

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8 0211

N^o 10387**NON-HAZARDOUS WASTE MANIFEST**

Manifest # SAJ-004 F.S.I.S. JOB # 91-52025 Date: 10/11/91
Generator: SAAD TROUSDALE DR, SILE Phone No.: 615-831-2807
21-5 TROUSDALE DR EPA ID No.: TND 065 833 543
Nashville, TN Contact: Robert DARWIN

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date 11 OCT 11 Signature [Signature]

Description of waste	Circle Form	Quantity	Circle Units	Container	
				No.	Type
<u>Sand / Carbon</u>	<u>Solid</u> Liquid Gas Sludge	<u>9000</u> <u>30</u>	Gallons Cu. Yds. <u>Pounds</u> Tons	<u>30</u>	<u>DM</u>

Transporter: Laidlaw Environmental Unit Number(s) _____
2815 Old GREENBROOK P.KE Phone No.: 615-244-2910
GREENBROOK TN 37073 EPA ID No.: 1100 800 0000
Vehicle License Tag Number(s) 800 114 Container: 706871

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature [Signature] Date 10-11-91 Delivering Driver's Signature _____ Date _____

Facility: Laidlaw Environmental Phone No. 615-244-2910
2815 Old GREENBROOK P.KE
GREENBROOK TN 37073 Contact: Giles, Ph. 11.05

Handling Method: _____

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of _____ to handle this material.

Date _____ Signature: _____

PROFILE # SAI-002

<u>DRUM #</u>	<u>CONTENTS</u>
KW-04	PPE
KW-06	PPE
KW-07	"
KW-18	"
KW-19	"
KW-38	"
KW-39	"
KW-40	"
KW-41	"
KW-42	"
KW-43	Plastic
KW-44	PPE
KW-45	"
KW-46	"
KW-47	"
KW-48	"
KW-49	"
KW-50	"
KW-51	"
KW-52	"
KW-53	"
KW-54	"
KW-55	"
KW-56	"
KW-57	"
KW-58	Plastic
KW-59	PPE
KW-60	"
KW-70	"
KW-71	"

PPE = Personal Protective Equipment

28 0213

LADLAN
ENVIRONMENTAL
SERVICES**Container Contents**

ARF No. _____

☒ Bulk☐ Mixed Lab

Receiving	Routing	Shipping

Container Number: 101191g1 SAJ-31-60		Chemist: JJM
DOT Shipping Name: Non-regulated material		596 597 598
Container Type: 12H55	UN/NA Number:	HM
Hazard Class:		

Line No.	Material Description	Liquid Solid	Material Quantity	RO	EPA Waste Code Number
01	Waste stream	S	30 x 50 P		NONE
02	SAJ-02				
03					
04	Carbon 0-10%				
05	Personal protective				
06	equipment + debris 90-100%				
07	Sand 0-10%				
08					
09	QC 18, 38, 51				
10					
11	100% personal protective equipment + debris				
12					
13	pH = 7				
14					
15	* note — drums full but material				
16	lightweight & <u>not</u> compacted				
17					
18					
19					
20					
21					
22					
23					
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25					
26					
27					
28					
29					
30					

This Lab Pack list continues:

Yes ☐ No ☐

This is page ____ of ____



FOUR SEASONS INDUSTRIAL SERVICES, INC.

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8 0214

N^o 10385

NON-HAZARDOUS WASTE MANIFEST

Manifest # SAS 002

F.S.I.S. JOB #

Date: 10/11/91

Generator: JAAD Treadwell Dr S. Le
3655 Treadwell Dr
Nashville, TN

Phone No.: 615-831-2807

EPA ID No.: TND 065 233,543

Contact: Robert Darnell

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date 11 OCT 91 Signature [Signature]

Description of waste	Circle Form	Quantity	Circle Units	Container	
				No.	Type
<u>Acrylonitrile / PDE / Plastic</u>	<u>Solid</u> Liquid Gas Sludge	<u>1500</u> <u>30</u> <u>JM</u> <u>29</u> <u>dm</u>	<u>Gallons</u> Cu. Yds. <u>Pounds</u> Tons	<u>30</u>	<u>DM</u>

Transporter: Ladlow Environmental
2815 Old Greenbrook Pike
Greenbrook TN 37073

Unit Number(s)

Phone No.: 615-244-8960

EPA ID No.: MD0 920 554

Vehicle License Tag Number(s) 3245 112

Container: 921881

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature [Signature] Date 10-11-91

Delivering Driver's Signature _____ Date _____

Facility: Ladlow Environmental
2815 Old Greenbrook Pike
Greenbrook TN 37073

Phone No. 615-244-8960

Contact: Paul Phillips

Handling Method: _____

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of _____ to handle this material.

Date _____ Signature: _____

2 8 0215

PROFILE # SAI-001

DRUM #

CONTENTS

KW-35

Hardened Sludge



Container Contents

2 8 0216

ARF No. _____

☒ Bulk☐ Mixed Lab

Container Number:

10119196 SAT-61

Chemist

J.M.

DOT Shipping Name:

Non-regulated material

596

597

Container Type:

12H55

UN/NA Number:

HM

Hazard Class:

Receiving	Routing	Shipping

Line No.	Material Description	Liquid Solid	Material Quantity	RQ	EPA Waste Code Number
01	Waste stream	S	1 X 300P		NONE
02	SAT-01				
03					
04	Hardened sludge 80-100%				
05	Debris 0-5%				
06	Soil 0-20%				
07					
08	QC Large blocks of resin				
09	2 1/3 plastic bags				
10	some soil				
11	100% solid				
12	PH = 7				
13					
14					
15					
16					
17					
18					
19					
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27					
28					
29					
30					

This Lab Pack list continues;

Yes ☐No ☐

This is page ____ of ____

**FOUR SEASONS INDUSTRIAL SERVICES, INC.**

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8 0217

N^o 10388**NON-HAZARDOUS WASTE MANIFEST**Manifest # SAJ001F.S.I.S. JOB # 91-55025Date: 10/10/91 ^{JM}Generator: SAAD Treadwell Dr. SitePhone No.: 615-831-28072455 Treadwell DrEPA ID No.: TND 065-833543Nashville TNContact: Robert DARRIN

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date 11 OCT 91 ^{JM}Signature James J. Windward, Project Coordinator
on behalf of the SAAD Treadwell Dr. Site

Description of waste	Circle Form	Quantity	Circle Units	Container	
				No.	Type
<u>Hardw Sludge</u>	<u>Solid</u> Liquid Gas Sludge	<u>100 JM</u> <u>2 drums</u>	<u>Gallons</u> Cu. Yds. <u>Pounds</u> Tons	<u>1 JM</u> <u>2</u>	<u>DM</u>

Transporter: Lad Law Environmental

Unit Number(s) _____

2815 Old Greenbriar PikePhone No.: 615-244-8960Greenbriar TN 37073EPA ID No.: MD0 980 551 632Vehicle License Tag Number(s) 7-11-91Container: 105891

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature [Signature]Date 10-11-91

Delivering Driver's Signature _____

Date _____

Facility: Lad Law EnvironmentalPhone No. 615-244-89602815 Old Greenbriar PikeGreenbriar TN 37073Contact: Giles Phillips

Handling Method: _____

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of _____ to handle this material.

Date _____ Signature: _____

Environmental Services

MATERIAL PROFILE

Name of Waste Stream

Hardened Sludge

LAIDLAW Use Only TC CERT 0. ILE

PLU

SAT-001

Generator Name Send Roundale Drive Site
Facility Address 3655 Roundale Drive
City Nashville
State TENN Zip Code _____
EPA Identification Number TND065833543

Technical Contact R. L. Webb
Title FSIS WASTE PLACEMENT COORD.
Telephone 919, 273-2718 EXT.
Billing Address P.O. Box 16590
BROKERED FOUR SEASON
City GREENSBORO State NC Zip 27416

Is Sample Available Upon Request?	
-----------------------------------	--

Yes X
No

Process Generating Waste Drummed waste salvaged from site clean up, material from oil water separator tank bottoms, HARDENED.
 Rate of Generation see time Container Type/Size 55 LDM EPA Waste No. _____ State Waste No. _____
 1. Does this waste contain spent solvents (F001 through F005)? Y _____ N X Materials listed under the California list? Y _____ N X
 2. Is this waste listed for Dioxin as defined in 40 CFR 262.31? (F020 - F023 and F026 - 28) Y _____ N X
 3. Is this waste INFECTIOUS? Y _____ N X Is it RADIOACTIVE? Y _____ N X Does it contain PCB's > 50ppm? Y _____ N X
 4. If you answered yes to questions 2 or 3....DO NOT CONTINUE. Please contact your LAIDLAW Technical Sales Representative for assistance.

Chemical Constituents (Must Total 100%)[illegible]

Physical Characteristics at 70°F

Physical State: Liquid X Semisolid _____ Solid X
Layers: None _____ Two _____ Multilayers _____
Free Liquids (%) 0 Precipitated Solids (%) 100
Viscosity: Low _____ Medium _____ High X
Is Material Pumpable? Yes _____ No X Polymerizable? Yes _____ No X
Specific Weight (lbs./gal) 9-10 lbs/gal /OR Specific Gravity(g/cc) _____
Appearance black Odor none
Flash Point(cc): Exact _____ <60°F _____ 61°F - 100°F _____
 101°F - 140°F _____ 141°F - 200°F _____ >200°F X
BTU/lb. medium Ash(%) 50-100% Water(%) <5%
pH (avg) neutral Range _____ to _____
Reactivity (Reactive with): NONE

(Please Attach All MSDS's, Sample Analysis and Additional Info.)

Metals (ppm)	
	$\frac{\text{TCLP}}{\text{EP}}$
As	<1.0
Ag	<1.0
Cd	<1.0
Ba	<1.0
Pb	<0.50

	Total	Total EF
Cr(Total)	<1.0	<0.50
Cr(Hex)		
Hg	<0.20	<0.010
Sb	<1.0	<0.10
Fe	177	

	Total		Total
Be	<u><1.0</u>	Si	
Ti		Na	<u>111</u>
Sb	<u><1.0</u>	Ni	<u><1.0</u>
S		Cu	<u>3.68</u>
P		Zn	<u>273</u>

Other: (Specify in PPM) <2.0

Free Cyanide 0

Free Sulfide 0

Phenolics _____

PCB's 0

Total Organic Halogens (%)

Fluorine 0

Chlorine 0

Bromine 0

I certify that all information on this form is complete and factual (including attached information) and is an accurate representation of the known and suspected hazards of the waste to be disposed.

Terrence A. Chubbworth on behalf of the Lead Site
Generators Signature Steering Committee

Information Completed By:

Name: Kirk Webb
Title: EMS - Waste Placement Coord. Date: 9/17/9



Environmental
Services

MATERIAL PROFILE

of Waste Stream

Carbon CONT. PPE

LAIDLAW Use Only

WASTE STREAM #

30-40 dr.

910 SAT-002

Generator Name Saad Trousdale Drive Site
Facility Address 3655 Trousdale Dr.
City Nashville
State TN Zip Code _____
EPA Identification Number TND 065833543

Technical Contact K.L. Webb
Title FSIS Waste PLACEMENT Coord.
Telephone 919 273-2715 EXT. _____
Billing Address P.O. Box 16590
City GREENSBORO State NC Zip 27416

Is Sample
Available
Upon Request?

Yes X
No _____

Process Generating Waste Clean out filter of oil/water separator, water filtration media

Rate of Generation one time Container Type/Size DM 155 EPA Waste No. NA State Waste No. NA

- Does this waste contain spent solvents (F001 through F005)? Y _____ N X Materials listed under the California list? Y _____ N X
- Is this waste listed for Dioxin as defined in 40 CFR 262.317 (F020 - F023 and F026 - 28)? Y _____ N X
- Is this waste INFECTIOUS? Y _____ N X Is it RADIOACTIVE? Y _____ N X Does it contain PCB's > 50ppm? Y _____ N X
- If you answered yes to questions 2 or 3, DO NOT CONTINUE. Please contact your LAIDLAW Technical Sales Representative for assistance.

Chemical Constituents (Must Total 100%)

Carbon	<u>00-10%</u>
Sand	<u>0-10%</u>
Debris (gloves, PPE, sticks, etc.)	<u>90-100%</u>
(see analysis for trace constituents all below regulatory level(s))	
= <u>100%</u>	

Physical Characteristics at 70°F

Physical State: Liquid _____ Semisolid _____ Solid X
Layers: None X Two _____ Multilayers _____
Free Liquids (%) 0 Precipitated Solids (%) 100%
Viscosity: Low _____ Medium _____ High X
Is Material Pumpable? Yes _____ No X Polymerizable? Yes _____ No X
Specific Weight (lbs./gal) 9-10 lbs/gal OR Specific Gravity (g/cc) _____
Appearance black, variable, SAND, DEBRIS, PPE Odor none
Flash Point(cc): Exact _____ <60°F _____ 61°F - 100°F _____
101°F - 140°F _____ 141°F - 200°F _____ >200°F X
BTU/lb. high Ash(%) <10% Water(%) <5%
pH (avg) neutral Range _____ to _____
Reactivity (Reactive with): oxidizers

(Please Attach All MSDS's, Sample Analysis and Additional Info.)

Metals (ppm)

	Total	TCLP
As	<u>1.28</u>	<u><0.10</u>
Ag	<u><1.0</u>	<u><0.10</u>
Cd	<u><1.0</u>	<u><0.10</u>
Ba	<u>122</u>	<u><1.0</u>
Pb	<u>15.5</u>	<u><0.50</u>

	Total	TCLP
Cr(Total)	<u>5.68</u>	<u><0.50</u>
Cr(Hex)		
Hg	<u><0.20</u>	<u><0.010</u>
Se	<u><1.0</u>	<u><0.10</u>
Fe	<u>3620</u>	

	Total		Total
Be	<u><1.0</u>	Si	
Ti		Na	<u>244</u>
Sb	<u><1.0</u>	Ni	<u>6.02</u>
S		Cu	<u>9.14</u>
P		Zn	<u>216.0</u>

Other (Specify in PPM)

Free Cyanide 2.5 (tot.) PCB's 0
Free Sulfide 0
Phenolics 0
Total Organic Halogens (%)
Fluorine 0 Bromine 0
Chlorine 0

I certify that all information on this form is complete and factual (including attached information) and is an accurate representation of the known and suspected hazardous waste to be disposed.

Signature of Donna D. Chubbuck on behalf of the Saad Site
Generators Signature Steering Committee

Date

Information Completed By:

Name: K.L. Webb

Title: FSIS - Waste Placement Coord.

Date: 9/17/91

022

MAIDLE ENVIRONMENTAL SERVICES

CUSTOMER NO. GBSAJ		BILLING ID 901518		SALES PERSON (186) RICHARD THORNTON		DATE 10/10/91	
CKUP DATE 10/11/91		CLIENT P.O. STANLEY EASTEP		DISP. SITE SWO		COUNTY	
CUSTOMER FOUR SEASONS INDUSTRIAL 7118 CROSSROADS BLVD ATTN STANLEY EASTEP BRENTWOOD TN 37027				PICKUP CUSTOMER ADDRESS SHAD TROUSDALE DRIVE SITE 3655 TROUSDALE DRIVE NASHVILLE TN K.L. WEBB (919) 273-2718			
TRANSPORTATION (04000)		UNIT/PRICE 30/55/3-5	UNIT/PRICE 85	EXTENSION		CHEMIST/DRIVER Jeremiah Macharen, Tommy Big	
0-50 MILES						MATERIALS (04040)	
51-100 MILES						85-G Salvage Drum-New	
101-200 MILES						55-G 17C, 17H, 17E Recon.	
200-500 MILES						55-G 34M - New	
▶ 500 MILES						30-G 17H - New	
TOTAL						30-G, 20-G Fiber New	
LABOR (04045)		HOURS	PRICE			5-G Pail - 37E, 37A-New, 34-5, 35-50	
Chemist		22				Dot Spec. Wooden Box	
THER		22				Drum Thief	
PROFESSIONAL SERVICES (04035)		QUANTITY	PRICE			Disposal Coliawassa	
SAMPLE ANALYSIS						Absorbant, Clay, Vermiculite, CornCob - Bag	
WASTE STREAM EVALUATION						Drum Pump-Use & Decon.	
						4 Mil Liners	
						Reactive Bags	
						Dot Labels	
						EPA Labels	
						Sample Bottles	
						Protective Gear - Level I	
						Protective Gear - Level II	
EQUIPMENT (04065)		QUANTITY	PRICE			OTHER (04055)	
						QUANTITY	
						PRICE	
DISPOSAL (04060)						Minimum Charge	

[illegible]



LMS TICKET NO.

2 8 0222

022062

NON-HAZARDOUS SPECIAL AND ASBESTOS WASTE MANIFEST

GENERATOR

GENERATOR I. SPECIAL WASTE - COMPLETE SECTIONS: I, N, V, VII, VIII, IX, XI, XII
INSTRUCTIONS: ASBESTOS WASTE - COMPLETE SECTIONS: I thru XII (Section 1, II required to analyze for hazardous waste characteristics)SECTION II BFI WASTE CODE TN 1842 921 010 258 72

SECTION III GENERATOR

NAME SAAD Trawsdale Dr Site

GENERATING LOCATION

MAILING ADDRESS 3155 Trawsdale Dr Nashville TN PHONE NO. 831-2807PHONE NO. 691-5052

SECTION III OPERATOR/CONTRACTOR

NAME FOUR SEASONSADDRESS 7118 CROSSROADS BLVD Brentwood TN 37027PHONE NO. 370-4770

SECTION IV OWNER

NAME

PHONE NO.

SECTION V WASTE DISPOSAL SITE

NAME SAAD Trawsdale Dr Site

PHYSICAL SITE LOCATION

MAILING ADDRESS 3155 Trawsdale Dr Nashville TNPHONE NO. 831-2807

SECTION VI RESPONSIBLE AGENCY (LOCAL, STATE, EPA)

NAME

ADDRESS

PHONE NO.

SECTION VII DESCRIPTION OF WASTE

CONTAINERS
NO. TYPETOTAL QUANTITY
UNITTYPE
DM-METAL DRUM
DM-PLASTIC DRUM
BA-6MIL PLASTIC
BAGS/WRAP
T-TRUCK
O-OTHERUNITS
P-POUND
Y-YARDS
M-CUBIC
METER
Y-CUBIC
YARDS
O-OTHERConstruction Debris20y³

ASBESTOS WASTE

 FRIABLE NON FRIABLE BOTH % FRIABLE % NON FRIABLE

SECTION VIII SPECIAL HANDLING INSTRUCTIONS AND ADDITIONAL INFORMATION

NONE

SECTION IX GENERATOR CERTIFICATION

I hereby certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.1 or any applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

BENNIE L. UNDERWOOD Project Coordinator

Print/Type Name & Title

Sharon L. Underwood on behalf of theSignature Seal Site Steering Committee

SECTION X OPERATOR CERTIFICATION (ASBESTOS)

I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.

Print/Type Name & Title

Shipment Date

Operator's Signature

TRANSPORTER

SECTION XI TRANSPORTER 1

NAME OF CO. Waste Management Inc

ADDRESS

DRIVER David McElroy

Print/Type Name/Title

TRUCK NO. 433 PHONE NO. 831-9600

Acknowledgement of receipt of materials.

Signature David McElroyShipment Date 10-16-91

SECTION XII TRANSPORTER 2

NAME OF CO.

ADDRESS

DRIVER

Print/Type Name/Title

TRUCK NO. PHONE NO.

Acknowledgement of receipt of materials.

Signature

Shipment Date

DISPOSAL SITE

DISCREPANCY INDICATION SPACE

DISPOSAL COORDINATES
(Landfill use only)

Print/Type Name

Signature/Date

SITE AND ADDRESS

DISPOSAL INSTRUCTIONS

I hereby certify that the above material has been accepted and to the best of my knowledge the foregoing is true and accurate.

EDITH STONE
Signature of Authorized Agent (PLEASE PRINT)Edith Stone
Signature of Authorized Agent10-16-91
Receipt Date

DESTINATION - WHITE

GENERATOR FILE - GREEN

GENERATOR - YELLOW

OPERATOR - PINK

TRANSPORTER - GOLDENROD

FOUR SEASONS INDUSTRIAL SERVICES, INC.

Post Office Box 16590
Greensboro, North Carolina 27416-0590
(919) 273-2716

TANK DISPOSAL MANIFEST

1)	Tank Owner/Authorized Representative Name and Mailing Address			
<p><i>Four Seasons Industrial Services, Inc.</i></p>				
2)	Tank Owner/Authorized Representative Phone No. () - -			
<p>(919) 273-2716</p>				
3)	Description of Tanks	Capacity	Previous Content	Comments
<p><i>100 Gallon Steel Drums</i></p>				
<p><i>100 Gallon Steel Drums</i></p>				
<p><i>100 Gallon Steel Drums</i></p>				
4)	Tank Owner/Authorized Representative Certification: The undersigned certifies that the above listed storage tanks have been removed from the premises of the tank owner.			
<p><i>[Signature]</i></p>				
<p>Printed/Typed Name: <i>John D. [unclear]</i> Signature: <i>[Signature]</i> Date: <i>12/17/91</i></p>				
5)	Transporter: The undersigned certifies that the above listed storage tanks have been transported to Four Seasons Industrial Services, Inc. at 16590 Post Rd., Greensboro, NC.			
<p><i>[Signature]</i></p>				
<p>Printed/Typed Name: <i>John D. [unclear]</i> Signature: <i>[Signature]</i> Date: <i>12/17/91</i></p>				
6)	Second Elimination Manager: The undersigned certifies that the above listed storage tanks have been cleaned and scrapped.			
<p><i>[Signature]</i></p>				
<p>Printed/Typed Name: <i>John D. [unclear]</i> Signature: <i>[Signature]</i> Date: <i>12/17/91</i></p>				
7)	Recycling Facility: The undersigned certifies that the above named storage tanks have been broken into scrap pieces and accepted by the metal recycling facility.			
<p><i>[Signature]</i></p>				
<p>Recycling Facility: <i>Steel Structures, Inc.</i></p>				
<p><i>[Signature]</i></p>				
<p>Printed/Typed Name: <i>John D. [unclear]</i> Signature: <i>[Signature]</i> Date: <i>12/17/91</i></p>				

28 0223

2 8

0224

STRAIGHT BILL OF LADING

ORIGINAL - NOT NEGOTIABLE

Shipper's No. _____

Carrier's No. 875965

SHIPPER: M.C. TANK TRANSPORT INC.

SCAC _____

Date _____

TO: TRICIL ENVIRONMENTAL SVC'S INC.
Consignee D/B/A Laidlaw Environmental SVC'SFROM: Four Seasons (Site)
Shipper

Street 1640 Antioch Pike

Street _____

Destination Antioch, TN Zip 37013

Origin Nashville, TN Zip _____

Route: _____

Vehicle Number _____

Number of Shipping Units	O HM	Kind of Packaging, Description of Articles, Special Marks and Exceptions	WEIGHT	RATE	CHARGES
1 TT	X	NON-Hazardous Waste Water STC # 76-7150 70/80 Trail 9-30-91 Fair Fleet 29/110	6000 Gal		

Remit C.O.D. to:
Address:
City: _____

State: _____

Zip: _____

COD Amt: \$

C.O.D. FEE:
Prepaid ☐ \$
Collect ☐ \$TOTAL CHARGES:
\$

FREIGHT CHARGES

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is specifically stated by the shipper to be not exceeding \$ _____ Per _____

Subject to Section 2 of the Uniform Code of Commerce, it is to be delivered to the consignee without recourse to the shipper. The shipper warrants that the property is as described and that the property is not subject to any lien or other claim of any kind.

FREIGHT PREPAID
Except when box is checked
CHECK BOX
If charges are to be collect

THIS is to certify that the above-named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per _____

SHIPPER: Four Seasons (Site) CARRIER: M.C. Tank
 PER: John F. F... DATE: 9/30/91 PER: John F. F... DATE: 9/30/91
 EMERGENCY RESPONSE TELEPHONE NUMBER: _____

Marked at all times the Hazardous Material is in transportation including storage incidental to transportation (172.604).

DEC-17-91 TUE 11:55

FOUR SEASONS

FAX NO. 6153704724

P.07

280225

TRICIL Environmental Services Inc.

1640 ANTIOCH PIKE

ANTIOCH, TENNESSEE 37013

PHONE (615) 833-2059

[illegible]

UNIFORM HAZARDOUS
WASTE MANIFEST

1. Generator's US EPA ID No.

TND06583354364178

Manifest
Document No.2. Page 1
of 1Information in the shaded areas is
not required by Federal law.

3. Generator's Name and Mailing Address

SAAD Trousdale Drive Site
3655 Trousdale Drive, Nashville, TN

4. Generator's Phone (615) 370-4720

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name

Laidlaw Env. Services, (TS) Inc. MDD 980554653

6. US EPA ID Number

C. State Transporter's ID

7. Transporter 2 Company Name

8. US EPA ID Number

D. Transporter's Phone 800-251-1227

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address

Laidlaw Env. Services, (TS) Inc.
2815 Old Greenbrier Pike
Greenbrier, TN 37073

10. US EPA ID Number

TND000645770

G. State Facility's ID

H. Facility's Phone

800-251-1227

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)

HMI

a. Non-regulated Material

0.18 DM 0.3290 P NONE

b. Non-regulated Material

0.01 DF 0.0150 P NONE

c. Hazardous Waste Liquid, n.o.s. (Lead)
NA9189 ORM-E (RQ, D008)

0.03 DM 0.1500 P D008

d. Hazardous Waste Solid n.o.s. (Arsenic,
Barium) NA9189 ORM-E (RQ, D004, D005, D006, D007, D008, D009, D010, D011)

0.05 DF 0.2500 P D004

J. Additional Descriptions for Materials Listed Above

d D005, D006, D007, D008, D009, D010, D011

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Emergency contact 1-800-535-5053 597
SWO # 14748

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment. OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name

BENNIE L. UNDERWOOD

Signature

B. L. Underwood, P. J. C. 12/1/92

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

Lewis Sisco

Signature

Lewis Sisco

Month Day Year

12/1/92

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name

Signature

Month Day Year



FOUR SEASONS INDUSTRIAL SERVICES, INC.

Post Office Box 16590
Greensboro, North Carolina 27416
(919) 273-2718

2 8

0227

N^o 11726

NON-HAZARDOUS WASTE MANIFEST

Manifest #

F.S.I.S. JOB #

Date: 2.17.92

Generator:

Saad T. P. ...

Phone No.: 370 4720

3655 ...

EPA ID No.: TND 065833543

Nashville TN

Contact: J. ...

Process which generated waste:

I certify that the materials described below are properly described, classified, packaged, marked & labeled, and are in proper condition to be transported in commerce under the applicable regulations of the State, the Environmental Protection Agency and the Department of Transportation. I certify that the waste described below is non-hazardous. I certify that the specific waste was delivered to the carrier named below for legal treatment, storage, or disposal at the site indicated.

Date

2/17/92

Signature

[Signature] Project Coordinator, on
behalf of the ...

Description of waste	Circle Form	Quantity	Circle Units	Container	
				No.	Type
<u>Carbon acid PPE</u>	<u>Solid</u> <u>Liquid</u> <u>Gas</u> <u>Sludge</u>	<u>300</u>	<u>Gallons</u> <u>Cu. Yds.</u> <u>Pounds</u> <u>Tons</u>	<u>1</u>	<u>DM</u>

Transporter:

Four Seasons

Unit Number(s)

7118 ...

Phone No.: 800-848-8720

Princeton TN 37027

EPA ID No.:

Vehicle License Tag Number(s)

Container: Trailer

I certify that the specified waste was transferred in a registered (licensed) vehicle to the disposal treatment, storage, or disposal facility named below and was accepted.

Pick-up Driver's Signature

Date

2/17/92

Delivering Driver's Signature

Date

2/17/92

Facility:

Lafayette ...

Phone No.

615-643-4511

2815 ...

Greensboro TN 37073

Contact: Johnny Wicker/Giles
Ph. 11/5

Handling Method:

Landfill

I certify that the transporter above delivered the specified material to this TSD facility and was accepted and properly handled in the above manner. We are authorized and qualified by the State of Tenn. to handle this material.

Date

2-17-92

Signature:

[Signature]

APPENDIX C
GEOPHYSICAL REPORT EM ANOMALY

REPORT OF FINDINGS
GEOPHYSICAL SITE CHARACTERIZATION

Saad Trousdale Drive Site
Nashville, TN

September 30, 1991

INTRODUCTION

D. F. Stazy & Associates was contracted to conduct a ground conductivity survey at the Saad Trousdale Drive Site in Nashville, Tennessee. This work was conducted on September 30, 1991, as part of the Removal Action/Field Investigation at the referenced site. Information, i.e., electromagnetic data, obtained during the geophysical survey may be incorporated into the final report.

SCOPE OF WORK

The scope of work for this project was to characterize the subsurface through an analysis obtained from geophysical and geologic data, emphasizing the resistivity of the soils, a search for buried containers; and, to trace conductive plumes in terms of culturally placed structures, engineered structures or natural pathways.

The area of investigation was limited to the Saad Site property and was further restricted by the presence of equipment, vehicles, and other cultural interference. A primary objective of the geophysical survey was to locate areas of potential drum burial for future remedial/removal activities.

SITE DESCRIPTION

The study area is located in Nashville, TN within an industrial area which borders Trousdale Road towards the east and CSX's Radner Yards towards the west. Private property borders the site in the north/south directions.

The site occupies 0.4 acres and the topography is flat to gently sloping. The LTD Auto Body Shop is an active operation on the site and is situated in an on-site building.

During the geophysical survey several pieces of equipment and vehicles were present which precluded the collection of data in those areas. The vehicles and equipment either caused interferences with the instrument or made it impossible to physically survey those areas.

A waste water tanker vehicle was parked at the southern edge of the site along with various pieces of drilling equipment positioned nearby; and, a roll-off container was observed parked at the opposite end at the north-central edge of the site.

METHODOLOGY

Upon consideration of the scope of work, a decision was made to use a Geonics model EM-31D, ground conductivity meter, for a full

scan of the study site, including two modes of operation, a quadrature component scan and an in-phase component scan.

The in-phase scan is designed to produce an instantaneous instrument response to buried ferrous iron materials, whereas the quadrature component provides conductivity or resistivity data along the lateral plane of the study area.

A magnetometer will provide information regarding the presence of subsurface iron but it will not identify other materials which do not contain ferrous iron. This device also requires a closely spaced grid system and consequently an expanded time requirement.

Nearby metallic materials have an adverse effect on data collection; and, the instrument is very sensitive to solar activity which also hinders data collection. It did not appear to be a cost effective device within the scope of work requirements.

Conversely, an electromagnetic instrument will respond to any metallic and non metallic material since it reacts to changes in subsurface resistivity. It is also more cost effective requiring fewer instrument stations.

Data was collected from a grid network which was initiated in a north south X axis direction on 25 foot centers; and, an east west Y axis direction having instrument stations at 25 foot intervals. The starting point, X 0, Y 0, was located at the northwest corner of the grid approximately 25 feet from the north property line. Physical obstructions and influencing electromagnetic materials required an approximate 25 foot apron area of operation.

An additional traversing sequence was initiated at 12.5 foot spacing and intervals. (refer to plates 3 & 4)

INSTRUMENT PRESENTATION

Ground Conductivity

The Geonics, model EM-31, Ground Conductivity meter is a geophysical probing instrument consisting of a console and two protruding fiberglass tubes. One fiberglass boom contains a transmitting coil and the other contains a receiving coil. The total length of the assembled booms and console is 13 feet.

Ground conductivity probing is a means of determining electrical resistivity characteristics of the subsurface correlated to known conditions and associated anomalous changes. This is accomplished by an electromagnetic coupling between the instrument and the surface of the earth. Under certain conditions, as determined by the design of the instrument, the magnitude of the electromagnetic field produced by a transmitter

coil is directly proportional to the terrain conductivity, or resistivity, in the vicinity of that coil.

Though the ground conductivity meter is specifically designed for mapping groundwater contamination migration and other subsurface characterizations, the detectibility of large metal objects can be measured by utilizing the in-phase component of the induced magnetic field. Experiments at the Geonics facility have indicated that the instrument will detect a single 45 gallon drum to a distance of about 12 feet.

Subsurface scanning of the EM-31 instrument in the in-phase mode produces qualitative visual data that will allow spontaneous on site evaluations. This application is well suited for UST, buried drum and pipe line exploration.

DATA ANALYSIS AND INTERPRETATIONS

The survey field work entailed two modes of operation with the conductivity instrument, a quadrature scan and an in-phase scan.

These data were than contoured in ohm-meter units of resistivity, producing the computer generated contour maps (plates 1 & 3).

Conversely, data was not collected from the in-phase procedure but rather interpreted insitu at the time of the scan. Anomalous locations from the in-phase procedure were marked in the field and in the report maps.

Quadrature Component Analysis

It is a usual practice to establish a normal background scale of conductivity values near the study vicinity. This is done to determine the operable range scale of background values relative to any anomalous targets that are identified.

The background values for this project were established in an open field to the east of Trousdale Road. The 30 mhos/meter scale was the indicated off-site scale to use as the established background, although the on-site range indicated a higher scale range of 100 mhos/meter.

Two reasonable explanations are possible for this expanded scale change. First, a masking effect of a higher magnetic flux produced by both buried and surface metallic materials may have elevated the natural expected background range; and, second, the elevated resistivity may have been produced by a strata or target having a consistently higher value.

Metallic resistivity response was encountered during the quadrature component scan of the site. The following list of instrument stations indicated a linear (pipe-like) metallic response:

X-0,	Y-12.5	X-25,	Y-75
X-0,	Y-25	X-37.5,	Y-12.5
X-0,	Y-50	X-37.5,	Y-25
X-12.5,	Y-25	X-50,	Y-0
X-12.5,	Y-50	X-50,	Y-12.5
X-25,	Y-12.5	X-50,	Y-25
X-25,	Y-25	X-50,	Y-37.5
X-25,	Y-37.5	X-50,	Y-62.5
X-25,	Y-62.5	X-50,	Y-75
		X-75,	Y-25

Referring to plate 1, these locations are generally represented by the anomalous contours specified in the indicated instrument stations.

IN-PHASE ANALYSIS

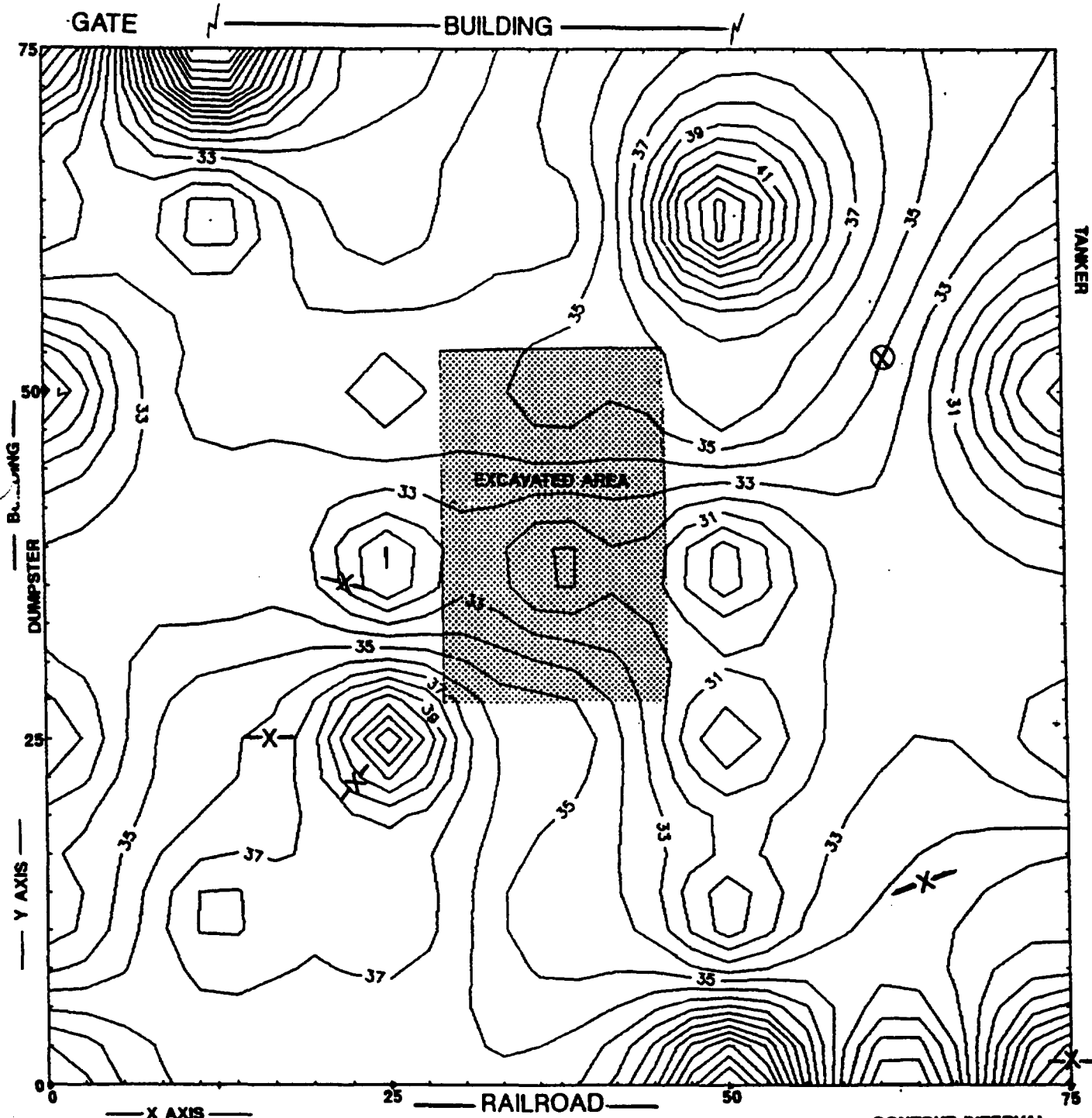
In-phase response anomalies were marked in the field and are identified on the corresponding contour map of plate 1. Responses which displayed an axial linearity are also marked on plate 1 as an X, and those having a somewhat massive metallic response are marked as a circled X.

Although the source of the axial linear anomaly is unknown, it is conceivable that two buried drums laid horizontally end to end could respond as a seemingly linear conductor. Though the likelihood is improbable, it is a valid consideration.

CONDUCTIVITY CONTOUR MAP



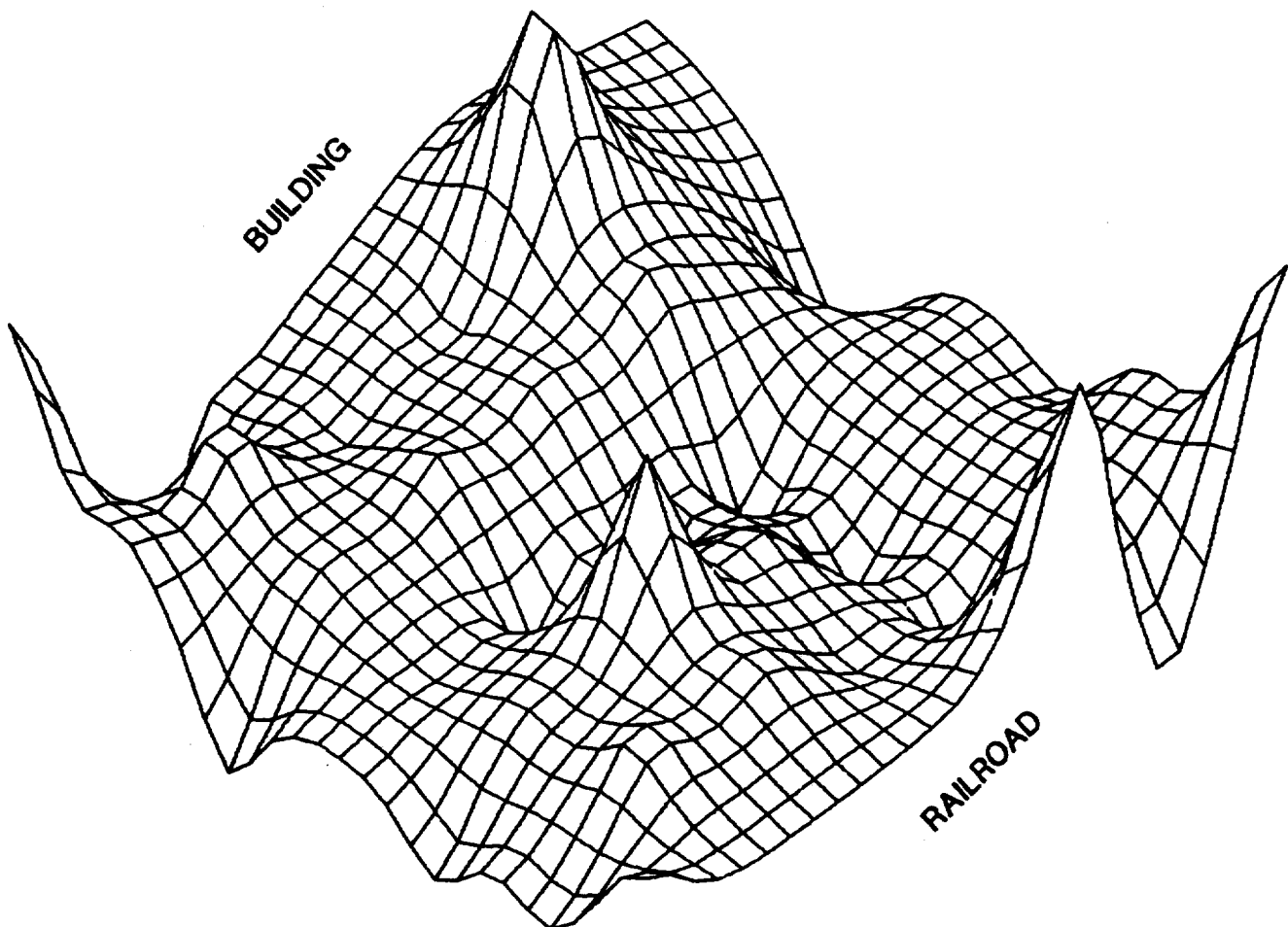
— TROUSDALE ROAD —



SAAD TROUSDALE DRIVE SITE
25 FOOT GRID

CONTOUR INTERVAL
1 OHM-METER
2.33 INCHES = 25 FEET
⊗ METALLIC ANOMALY,
—X— LINEAR METALLIC ANOMALY

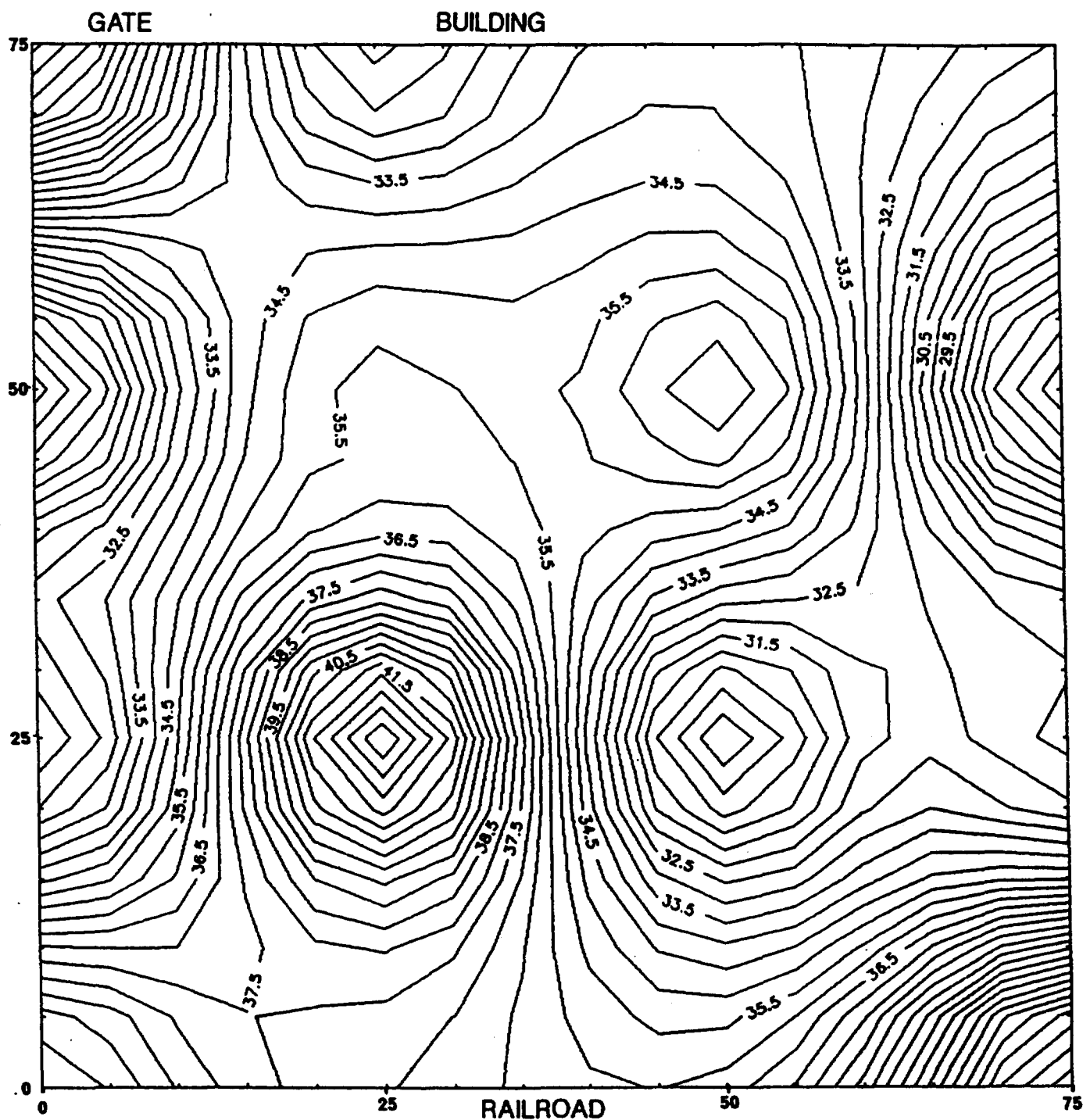
THREE DIMENSION GRAPHIC



SAAD TROUSDALE DRIVE SITE
25 FOOT GRID

NOTE: THREE DIMENSION GRAPHIC
DERIVED FROM 25 FOOT GRID (PLATE 1)

COMPUTER CONTOUR MAP



SAAD TROUSDALE DRIVE SITE

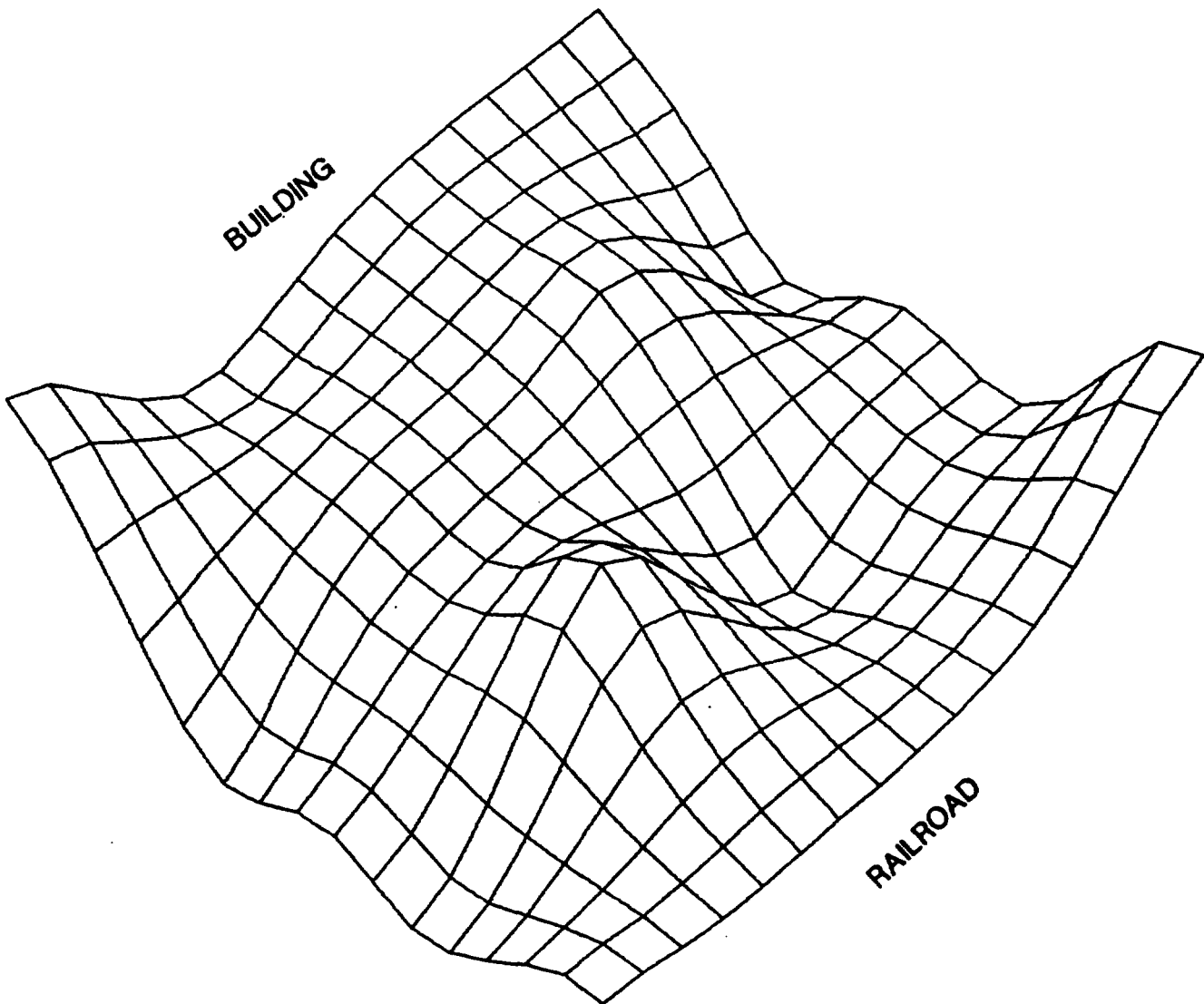
12.5 FOOT GRID

2.33 INCHES = 25 FEET

CONTOUR INTERVAL

.5 OHM-METERS

THREE DIMENSION GRAPHIC



SAAD TROUSDALE DRIVE SITE
12.5 FOOT GRID

NOTE: THREE DIMENSION GRAPHIC
DERIVED FROM 12.5 GRID (PLATE 3)

APPENDIX D
BORING LOGS (B-1 - B-7)

PROJECT: Sand Trousdale Road Site

LOCATION: 3655 Trousdale Road, Nashville, TN

PROJECT NUMBER: 4008-040

LOGGED BY: Stuart Schnitz/DRE Technologies

DRILLER: Pete Brown/DRE Technologies

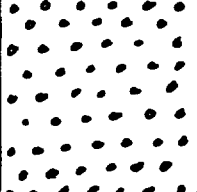




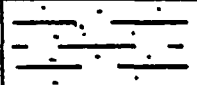
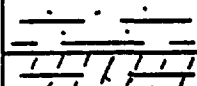
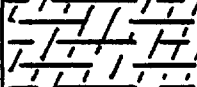
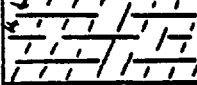

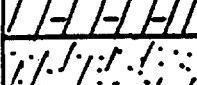
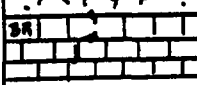
DATE (START): 10/2/91

DATE (FINISH): 10/3/91

ILLING EQUIP: Mobile B-34 Rig with 3.25" HSA

TOTAL DEPTH OF BORING: 23.7'

BORING DIAMETER: 6.625"

CORING TOOLS		SOIL SAMPLER		GROUNDWATER			
SIZE: NQ BARREL LENGTH: 5' FLUID: City Water		TYPE: Split-Spoon HAMMER: 130 lbs. FALL: 30"		DATE: 10/3/91 DATE: 10/3/91 GROUND ELEVATION/DATUM:	TIME: 0823 TIME: 1635	DEPTH: 10.6' BLG DEPTH: 12.0' BLG	
Depth	Sample	Rec.	Blows/6"	Description	Well Mat'l	Graphic Log	PID Screening
0— 2.5— 5.0— 7.5— 10— 12.5— 15— 17.5— 20— 22.5— 25—			Auger to 3 ft, Limestone Gravel Encounter grey moist CLAY	No Well Material Installed		6.0 ppm (cuttings)	
	B-1-1	2"	17-12-14-refusal		Dark grey sandy CLAY, moist to wet and red brick fragments (FILL). Cuttings at 5' dry pea gravel		13.0 ppm (SS) 37 ppm (pea gr.)
	B-1-2	1.2"	25/0.1'-refusal		Red brick fragments (fill) Difficult drilling at 6.5' (Concrete ?)		None Taken
	B-1-3	7.2"	45-refusal		Concrete fragments returning Grey silty CLAY and concrete fragments, dry, difficult drilling		547 ppm (HS)
	B-1-4	1.2"	50/0.6'-ref.		Concrete fragments Resume drilling, rough to 9.8' then soft		26 ppm (SS)
	B-1-5	24"	24-6-9-11		Blackish-grey sandy SILT, moist to wet, no plasticity, fine-med. grained sand, with oil staining		210 ppm (HS) solvent odor
	B-1-6	24"	Shelby Tube		Blackish-grey sandy SILT, moist to wet trace clay		337 ppm in augers solvent odor
	B-1-7	24"	7-6-8-8		Blackish-grey clayey SILT, moist to wet no plasticity		272 ppm (HS)
	B-1-8	24"	9-6-12-12		Top 16"-Same as above Bottom 8"-Dark olive grey clayey SILT with increasing clay content		31 ppm (HS)
	B-1-9	24"	8-8-9-6		Auger to 18' to get on easier breaks for driller Dark grey and black mottled silty CLAY, moist to wet with increasing clay and stiffness toward end of (SS)		501 ppm (HS)
	B-1-10	24"	8-5-7-50/refusal		Grey and dark olive grey mottled clayey SAND, wet to saturated, med. stiff		48 ppm (HS)
	B-1-11	0"	13-11-50/refusal		Begin NQ rock core @ 22.6 ft. Full 1 Ran - 0.7', Rec - 0.66', Loss - 0.06', Depth - 23.3' Desc: Grey thinly bedded LIMESTONE with small solution openings (not continuous through sample) with quartz crystal growth. Bedding horizontal. stylolites present. Out of water. Drive (SS) to confirm bedrock (B-1-11).		
					Total Depth of Boring = 23.7'		

DRE technologies, Inc.				BORING LOG		BORING: B-3		PAGE 1 of 1	
PROJECT: Sand Treadle Road Site					LOCATION: Nashville, Tennessee				
PROJECT #: 4008-040					LOGGED BY: Stuart Schuk				
OPERATOR: Pete Brown				DATE (START): 10/3/91		(FINISH): 10/3/91			
EQUIPMENT TYPE: Mobile H34 3.25" HSA				TOTAL BORING DEPTH: 29.0'		BORING DIAMETER: 6.25"			
CORING TOOLS		SOIL SAMPLER		GROUNDWATER					
SIZE: BARREL LGTH: FLUID:		TYPE: Split Spoon HAMMER: 130 lbs. FALL: 30"		DATE: 10/3/91 TIME: 1635		DEPTH TO WATER: 16.5'			
				DATE: TIME		DEPTH TO WATER:			
				GROUND ELEVATION/DATUM: 588.45'					
DEPTH	Sample Number	Rate	Blow/6"	Description	Equipment Installed	Lithology	PID: Screening Results (ppm)		
0				Auger to 7.7' through gravel and concrete			63 ppm (cuttings)		
2.5									
5									
7.5									
	B-2-1	0"	7-50/ref.	CONCRETE fragments in end of split-spoon					
10									
	B-2-2	14"	6-3-7-7	Top 12"-Dark grey silty SAND, wet, fine to medium grained, stiff, well sorted. Bottom 4"-Same with trace grey brown silty CLAY, stiff					
12.5	B-2-3	24"	PUSH	SHELBY TUBE COLLECTED					
15									
	B-2-4	24"	7-8-9-7	Dark olive grey silty SAND, wet, fine to medium grained, well sorted, wet, some oil staining			73 ppm (HS)		
17.5									
	B-2-5	14"	16-7-10-7	Dark olive grey and grey brown mottled sandy CLAY, moist to wet, trace oil staining			6.0 ppm (HS)		
20									
	B-2-6	14"	1-2/ref.	Dark olive grey clayey SAND, fine to medium grained, saturated, well sorted			5.0 ppm (HS)		
22.5									
25				Auger to 23.8' and set up to core Begin NQ Rock Core Pull 1 RAN-5.2' REC-5.2' LOSS-0.0' DEPTH-29.0' DESC-Grey crystalline LIMESTONE, thinly bedded bedding horizontal (Bedrock), vugs with qtz crystal growth inside vugs TD = 29.0'					

DRE technologies, inc.				BORING LOG		BORING: B-3		PAGE 1 of 1	
PROJECT: Sand Trousdale Road Site					LOCATION: Nashville, Tennessee				
PROJECT #: 4008-040					LOGGED BY: Stuart Schulz				
DRILLER: Pete Brown				DATE (START): 10/4/91		(FINISH): 10/4/91			
EQUIPMENT TYPE: Mobile B34 Rig, 3.25" HSA				TOTAL BORING DEPTH: 25.7'		BORING DIAMETER: 6.625"			
BORING TOOLS		SOIL SAMPLER		GROUNDWATER					
SIZE: NQ BARREL LGTH: 5' FLUID: City Water		TYPE: Split Spoon HAMMER: 130 lbs. FALL: 30"		DATE: 10/4/91 TIME: 1537		DEPTH TO WATER: 3.0' BGL DEPTH TO WATER:			
DATE:		TIME:		GROUND ELEVATION/DATUM: 589.15'					
DEPTH (FT)	Sample Number	Hammer	Blows/6"	Description	Equipment Installed	Field Notes	PDR Results (ppm)		
0				Auger to 5 ft. prior to sampling. Encounter blackish grey silty sand (FILL)			No Reading		
2.5							13.0 ppm (in augers)		
5	B-3-1	6"	4-2-50/ref.	Blackish grey silty SAND with Limestone and pea gravel, saturated. CONCRETE fragments in end of spoon.			7.0 ppm (SPT)		
7.5				Difficult augering. Concrete to 8.3' then soft to 8.5' then hard to 8.7'. Attempt to sample soil at 8.7'. Still in concrete. Continue augering in concrete to 9.6'. Attempt to sample soil again.			100 ppm (in augers)		
10	B-3-2	13"	46-8-10-50 refusal	Poorly cemented CONCRETE, laminated			435 ppm (HS)		
12.5	B-3-3	6"	6-50/ refusal	CONCRETE with medium to coarse grained SAND, little black clayey silt at bottom of split-spoon, moist to wet			6.0 ppm (SPT)		
15	B-3-4	24"	4-5-7-8	Dark grey clayey SILT, moist to wet, no plasticity			274 ppm (SPT)		
17.5	B-3-5 and B-3-6	0" and 24"	PUSH and 3-7-13-10	Attempt SHELBY TUBE, unsuccessful - unable to push shelly tube through soil "Rusty" reddish green silty CLAY, moist to wet, no plasticity, trace small phosphate nodules			137 ppm (HS)		
	B-3-7	12"	9-7-10-6	Blackish grey silty CLAY, no plasticity, wet to saturated, trace "rusty" brown silty clay at end of split spoon			105 ppm (HS)		
20	B-3-8	6"	50/refusal	Blackish grey silty SAND, saturated with oil staining, strong petroleum odor			No Reading		
22.5				BEGIN NQ ROCK CORE PULL 1 RAN - 4.8' REC - 4.8' LOSS - 0.0' DEPTH - 25.7' DESC - Grey thinly bedded atollitic LIMESTONE, with vugs with quartz crystals inside vugs					
25				TD = 25.7'					

PROJECT: Sand Trussdale Road Site

LOCATION: Nashville, Tennessee

PROJECT #: 4008-040

LOGGED BY: Stuart Scholz

DRILLER: Pete Brown

DATE (START): 10/7/91

(FINISH): 10/7/91

EQUIPMENT TYPE: Mobile B34 Rig, 3.25"HSA

TOTAL BORING DEPTH: 24.3'

BORING DIAMETER:

CORING TOOLS		SOIL SAMPLER		GROUNDWATER			
SIZE: NQ BARREL LGTH: 5' FLUID: City Water		TYPE: Split Spoon HAMMER: 130 lbs. FALL: 30"		DATE: DATE: GROUND ELEVATION/DATUM: 588.35'	TIME: TIME:	DEPTH TO WATER: DEPTH TO WATER:	
DEPTH	Sample Number	Rec.	Blows/6"	Description	Equipment Installed	Lithology	TID Screening Results (ppm)
0— . . . 2.5— . . . 5— . . . 7.5— . . . 10— . . . 12.5— . . . 15— . . . 17.5— . . . 20— . . . 22.5— . . . 25—				Auger to 5' prior to sampling, gravel			2.0 ppm (Cuttings)
	B-4-1	8"	11-6-5-2	Gravel and Limestone rock fragments (FILL) with trace oil staining			1.2 ppm (in spoon)
	B-4-2	10"	11-4-4-18	GRAVEL and silty SAND, blackish grey, fine to medium grained, well sorted and oil saturated			2.4 ppm (in spoon)
	Pull 1			Encounter resistance, pull augers, limestone cobbles. Begin NQ Rock Core at 9.6'. Pull 1 Ran -1.1'; Rec -1.1'; Depth -10.7' Limestone BOULDER with weathered ends showing oxidation			12.0 ppm (cuttings)
	B-4-3	2"	40-17-17-50/refused	Oil soaked gravel and limestone shards (FILL), end of spoon is full of thick oil			5.0 ppm (in spoon)
	Pull 2			Set up to core, core barrel unable to reach 12.7' due to debris fall in in hole. Start coring at 11.4' (1.3' of fall in)			No Reading
	B-4-4	22"	8-8-20-14	Core for .79' - Limestone cobble, then push core barrel 1.63' - sample is oil stained olive brown silty CLAY, moist to wet, heavy oil staining just below limestone cobble			
	B-4-5	2"	8-7-11-8	Olive brown silty CLAY with trace small rounded phosphate nodules, moist very stiff, some oil staining			523 ppm (headspace)
	B-4-6	0"	3-5-34-8	No sample collected - sample consisted of saturated oily mixture of sandy clay and gravel (fall in). Bottom 2" of spoon - same material as described in sample B-4-4			No Reading
				No sample collected - fall in prevented sample recovery. Install core tools and push core barrel to locate top of rock. Hit resistance at 19.3' - begin NQ rock core at 19.3'			No Reading
	Pull 3	5.0'	NA	Pull 3 RAN - 5.0' REC - 5.0' LOSS - 0.0' DESC - Light to medium grey LIMESTONE, thinly bedded, bedding horizontal, stylolites and vugs present, small quartz crystals in vugs, natural breaks along stylolites			No Reading

TD = 24.3'

PROJECT: Sand Treadle Road Site

LOCATION: Nashville, Tennessee

PROJECT #: 4008-040

LOGGED BY: Patricia Thompson

DRILLER: Pete Brown

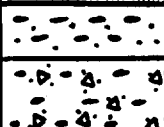
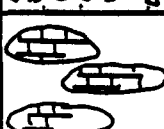
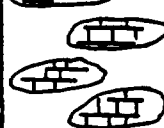


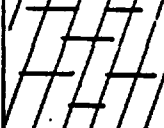
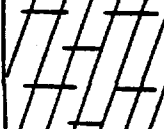
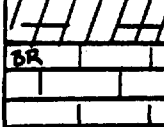



DATE (START): 10/10/91

(FINISH): 10/10/91

EQUIPMENT TYPE: Mobile B34 Rig, 3.25" HSA

TOTAL BORING DEPTH: 21.2'

BORING DIAMETER: 6.625"

CORING TOOLS		SOIL SAMPLER		GROUNDWATER			
SIZE: NQ BARREL LGTH: 5' FLUID: City Water		TYPE: Split Spoon HAMMER: 130 lbs. FALL: 30"		DATE:	TIME	DEPTH TO WATER:	
				DATE:	TIME	DEPTH TO WATER:	
				GROUND ELEVATION/DATUM: 587.47'			
DEPTH	Sample Number	Run	Blows/5'	Description	Equipment Installed	Lithology	LEAD Concentration Results (ppm)
0				Augered to 6.5'. Gravel and sand (Fill) Gravel and Concrete, petroleum odor			10.0 ppm (cuttings)
2.5				Augered through Limestone boulders and cobbles			0.0 ppm (in boring)
5				Auger refusal Set up to NQ rock core through limestone boulders			No Reading
7.5	Pull 1	2.5'	NA	Boring caved in to 5.7' - attempted split spoon from 5.7'-7.7' No sample collected; install coring tools and push core barrel to a depth of 6.3' and start coring.			No Reading
10	Pull 2	0.75'	NA	Pull 1 RAN - 2.5' REC - 2.5' LOSS - 0.0' DEPTH - 8.8' DESC - LIMESTONE BOULDER			No Reading
12.5				Pull 2 RAN - 2.4' REC - 0.75' LOSS - 1.45' DEPTH - 11.2' DESC - LIMESTONE BOULDER with dark grey clay on top of core and oil stained clay on bottom of core.			No Reading
15	B-5-1	5'	Push	Install core barrel, less resistance, may be through limestone boulder zone. Attempt to collect soil sample using core barrel without running water.			No Reading
17.5	B-5-2	2.1'	Push				0.0 ppm (spoon)
20	Pull 3	4.2'	NA	B-5-1 (11.2'-13.7') Medium brown silty CLAY trace sand, moist, with slight oil staining and odor, high plasticity, stiff B-5-1 (13.7'-16.2') Light yellowish brown CLAY with weak orange mottling, trace small limestone fragments and sand, moist, stiff, medium plasticity, slight odor. Bagged soil from 12.2'-13.4' for geotechnical analysis. Chose remaining sample for TAL/TAC analysis			0.0 ppm (spoon)
22.5				B-5-2 (16.2'-16.8') Light brown with grey mottling silty CLAY with trace fine sand, moist to wet, stiff, medium plasticity, trace small phosphate nodules			0-2 ppm (spoon)
25				Start NQ Rock Core at 16.8' (See page 2 for description)			

PROJECT: Sand Trundle Road Site

LOCATION: Nashville, Tennessee

PROJECT #: 4008-040

LOGGED BY: Patricia Thompson

DRILLER: Pete Brown

DATE (START): 10/11/91

(FINISH): 10/11/91

EQUIPMENT TYPE: Mobile B34 Rig, 3.25" HSA

TOTAL BORING DEPTH: 15.2'


BORING DIAMETER: 6.625"

CORING TOOLS		SOIL SAMPLER		GROUNDWATER			
SIZE: NQ BARREL LGTH: 5' FLUID: City Water		TYPE: Split Spoon HAMMER: 130 lbs. FALL: 30"		DATE:	TIME	DEPTH TO WATER:	
				DATE:	TIME	DEPTH TO WATER:	
				GROUND ELEVATION/DATUM: 589.14'			
DEPTH	Sample Number	Ran	Blows/6"	Description	Equipment Installed	Lithology	PID Screening Results (ppm)
0				Auger to 3.5' - Gravel and dark grey sandy clay			No reading
2.5							
	B-6-1	17"	31-21-22-10	Top 2" Gravel; remainder dark grey sandy CLAY (FILL), approximately 30% gravel, dry, petroleum odor			No Reading
5							
	B-6-2	9"	15-11-11-50	Dark grey and greyish green sandy CLAY and GRAVEL FILL (gravel approx. 30%), oil staining throughout sample and slight odor, slightly moist except for last 2" of sample wet			No reading
7.5				Split-spoon and auger refusal at 7.4' - set up to core. Begin NO Rock Core at 7.7'			
	Pull 1	2.0'	NA	Pull 1 RAN - 3.0' REC - 2.0' LOSS - 1.0' DEPTH - 10.7'			No Reading
10							
	Pull 2			DESC - Medium light grey medium grain fossiliferous LIMESTONE with oxidized zone at 9.2' and 9.8'. Bedding horizontal - bedrock (?).			No reading
12.5							
				Attempt to core 5' to confirm bedrock			
15				Pull 2 RAN - 1.8' REC - 3" of core and 3 blocked off pieces of LS DEPTH - 13.7'			No Reading
17.5				Pulled core because hole was blocking off DESC - Grey LIMESTONE with oil stained fracture surfaces			
20				Attempted to core again from 13.7'. Stopped at 15.2' because hole blocking off again. Recovered Limestone cobbles with oil staining on fractured surfaces. Attempted to core again. Encountered black oil and water in hole. Stopped coring so as not to open bedrock to oily water. NOT ON BEDROCK.			36 ppm (core barrel)
22.5							
25							

TD = 15.2'

DRR technologies, inc.		BORING LOG		2 8 0246		BORING: B-7		PAGE 1 of 2	
PROJECT: Sand Tronadale Road Site						LOCATION: Nashville, Tennessee			
PROJECT #: 4008-040						LOGGED BY: Patricia Thompson			
DRILLER: Pete Brown				DATE (START): 10/15/91		(FINISH): 10/15/91			
EQUIPMENT TYPE: Mobile B34 Rig, 3.25" HSA				TOTAL BORING DEPTH: 21.2'		BORING DIAMETER: 6.625"			
CORING TOOLS		SOIL SAMPLER		GROUNDWATER					
SIZE: NQ BARREL LGTH: 5' FLUID: City Water		TYPE: Split Spoon HAMMER: 130 lbs. FALL: 30"		DATE: TIME: DEPTH TO WATER: DATE: TIME: DEPTH TO WATER: GROUND ELEVATION/DATUM: 588.81'					
DEPTH	Sample Number	Race	Barrel 6"	Description	Equipment Installed	Findings	PID Screening Results (ppm)		
0				Sandy clay and gravel (FILL), moderate oil staining on soils.			Max = 15 ppm (cuttings)		
2.5				Encounter concrete at 2.0'. Auger through concrete and limestone cobbles at 2.6'. At 3' auger cuttings wet with limestone fragments. Auger refusal at 3' due to limestone boulder. Cuttings wet. Set up to core through boulder.			17 ppm max (in boring)		
5				Pull 1 RAN - 2.5' REC - 0.5' DEPTH - 5.5' LOSS - 2.5'			12.0 ppm (in boring)		
7.5				DESC - LIMESTONE BOULDER			No Reading		
10				Pull 2 RAN - 0.4' REC - 0.3' LOSS - 0.1' DEPTH - 5.9' DESC - LIMESTONE BOULDER with oil/grease film on fractured surface			No Reading		
12.5				Pull 3 RAN - 1.6' hole blocking off, pull core REC - 0.6' LOSS - 1.0' DEPTH - 7.5' DESC - LIMESTONE BOULDER			No Reading		
15				Pull 4 RAN - 3.5' REC - 2.6' LOSS - 0.9' DEPTH - 11.0'					
17.5				DESC - LIMESTONE BOULDER, core covered with oil at 10' depth to end of core. Core loss probably due to soil washed away during coring.					
20				Pull 5 RAN - 5.5' REC - 0.0' LOSS - 5.5' DEPTH - 16.5'			250 ppm (in boring)		
22.5				DESC - Pushed core barrel through soil. No recovery. Water in hole black with strong odor.			381 ppm (in boring)		
25				Pull 6 RAN - 2.2' REC - 0.0' LOSS - 2.2' DEPTH - 18.7'					
				DESC - Pushed core barrel through soil until felt resistance. No soil sample recovered, just black oily water. Pulled rods and attempted to collect a split-spoon sample.					

PROJECT/LOCATION: Sand Trundle Road Site, Nashville, Tennessee

DEPTH	Sample Number	Rate	Blows/6"	Description	Equipment Installed	Lithology	PID Screening Results (ppm)
7.5							
	B-7-1	3"		Soil and limestone fragments. Soils collected for analyses (SB07-S1)			No Reading
20				Attempt to core again. Hole caving in from pulling rods earlier. Advance core barrel to 21.2'. No core recovery and no soils encountered. Drill bit burned - Stop coring.			
22.5				TD = 21.2'			
25				Bedrock assumed to be at 18.7'			

APPENDIX E
GEOTECHNICAL REPORT



Professional Service Industries, Inc.
Pittsburgh Testing Laboratory Division

November 6, 1991

DRE Technologies Inc.
133 Holiday Court
Suite 200
Franklin, Tennessee 37064

Attention: Mr. Stuart Schulz

Re: Laboratory Test Results of
Soil Samples from SAAD Site
Nashville, Tennessee
PSI File No. 358-15140-1

Mr. Schulz:

Professional Service Industries, Inc. (PSI) is pleased to submit the following laboratory test results for soil samples from the SAAD Site in Nashville, Tennessee. The soil samples were submitted to PSI for testing by a representative of DRE Technologies. The laboratory tests were performed in accordance with the applicable ASTM Designation or with other accepted laboratory methods.

Following is a list of tests which were performed as requested by DRE Technologies along with the laboratory method utilized:

1. Cation Exchange, EPA 9080
2. Moisture Content, ASTM D2216
3. Falling Head Permeability, Corps of Engineers EM 1110-2-1906
4. Grain Size/Hydrometer, ASTM D422
5. Density Determination, ASTM D1587
6. Porosity, calculated
7. Specific Gravity, ASTM D854
8. Ph, EPA 150.1

Results of these laboratory tests are attached to this report.

PSI appreciates the opportunity to be of service to you on this project. If you have any questions concerning the test results or if we may be of further service, please contact our office.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Victor M. Augspurger

Victor M. Augspurger
Staff Geologist

John D. Godfrey, Sr.

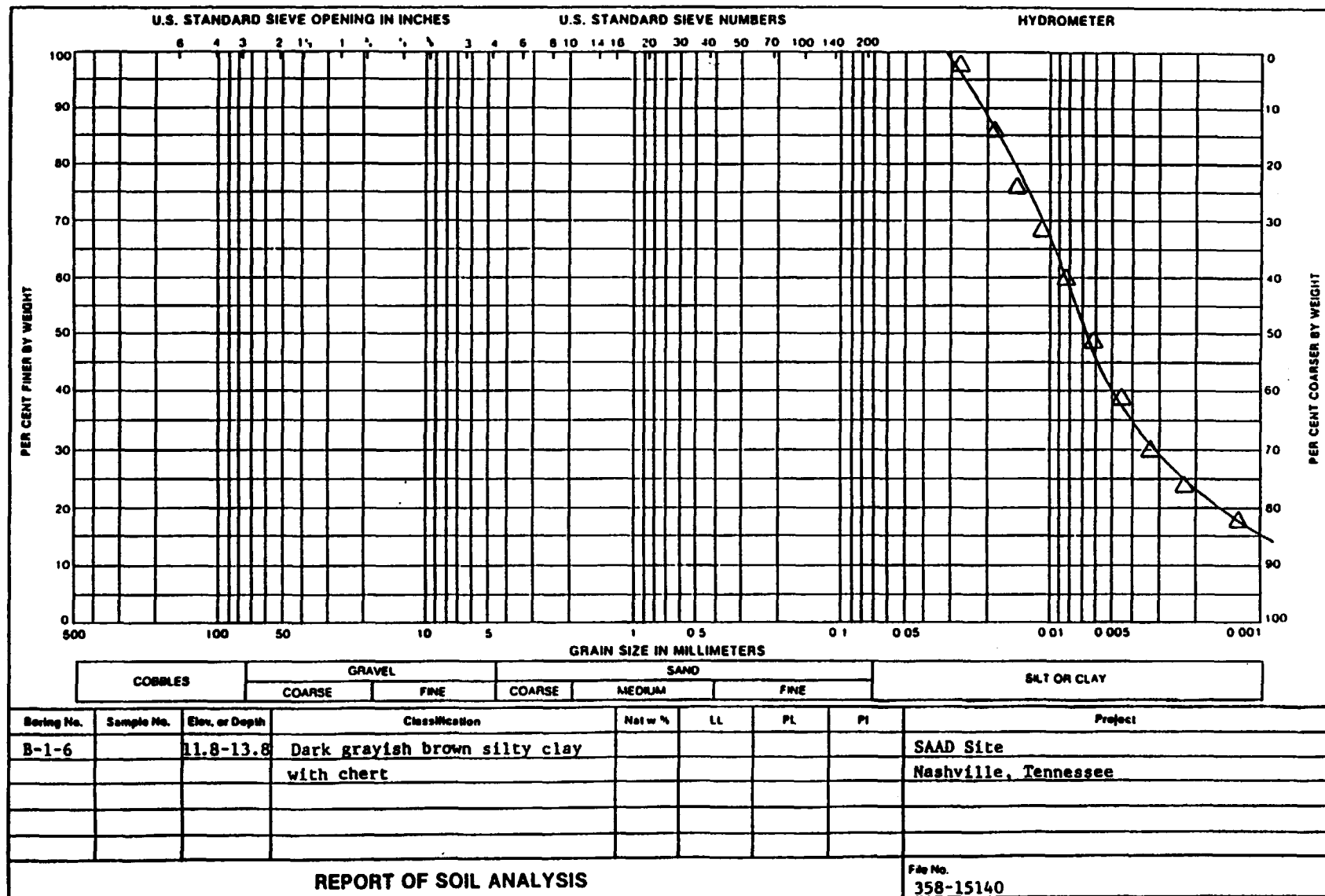
John D. Godfrey, Sr.
Senior Division Manager - Nashville

VMA/JDG/st

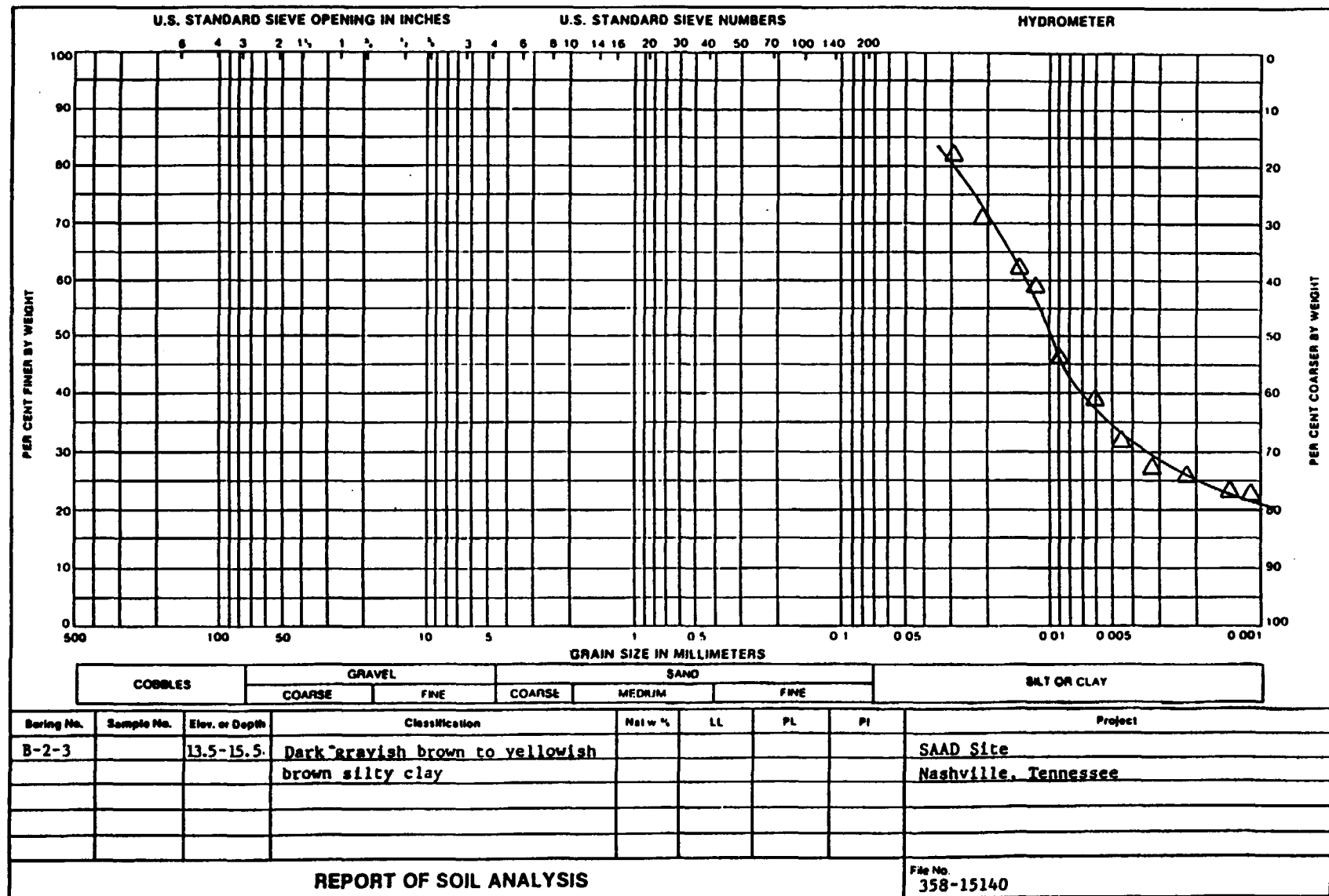
Attachments

SUMMARY TABLE OF LABORATORY TEST RESULTS

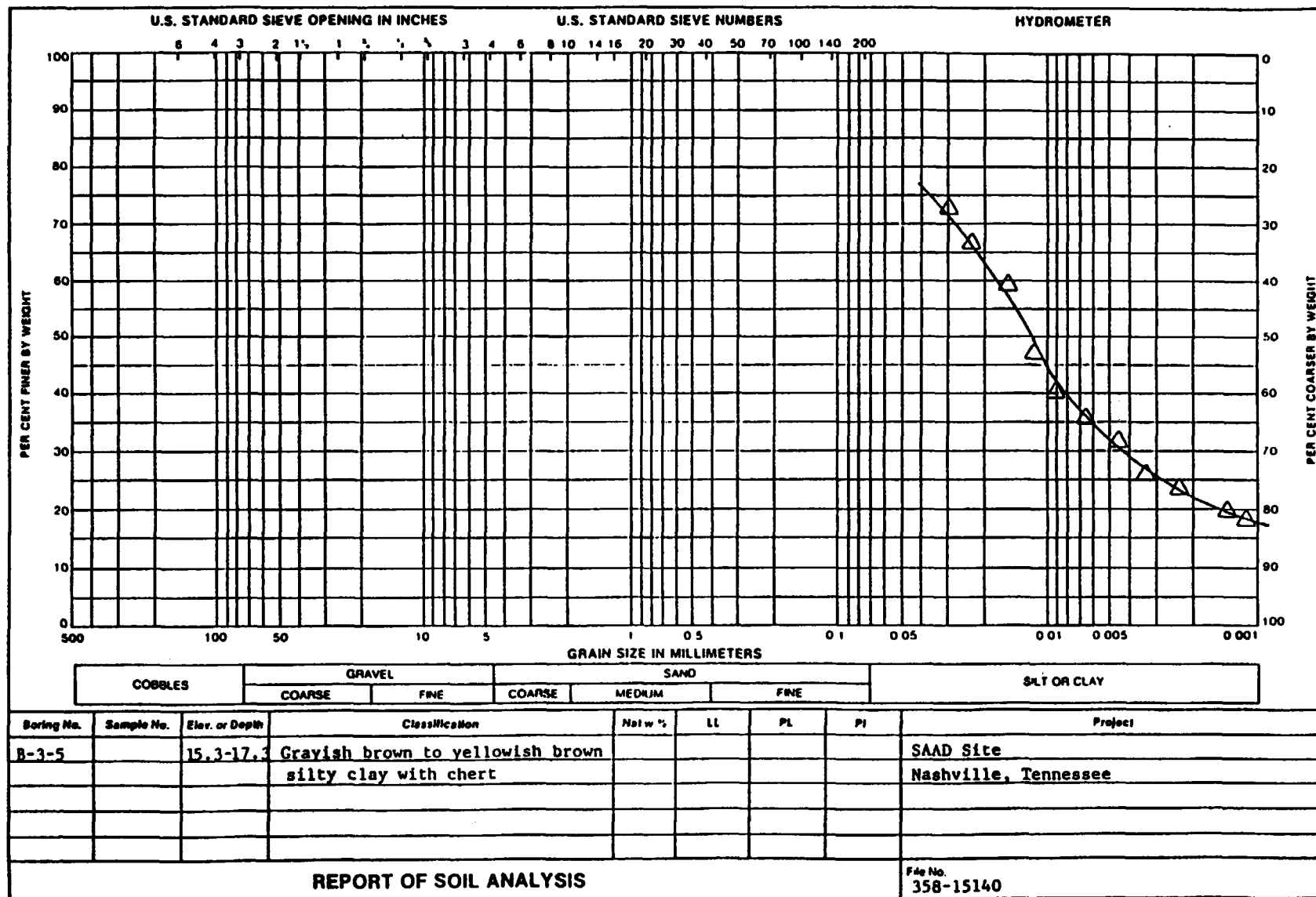
<u>oring #</u>	<u>Depth (ft)</u>	<u>Classification</u>	<u>Dry Unit Weight (PCF)</u>	<u>Moisture Content (%)</u>	<u>Porosity (%)</u>	<u>Specific Gravity</u>	<u>Coefficient of Permeability (cm/s)</u>	<u>PH</u>	<u>Cation Exchange (Meq/100 g)</u>
B-1-6	11.8-13.8	Dark grayish brown silty clay with chert.	100.67	29	45.87	2.55	4.6×10^{-7}	6.12	22.6
B-2-3	13.5-15.5	Dark grayish brown to yellowish brown silty clay.	101.31	25	37.56	2.60	1.8×10^{-7}	6.43	20.0
B-3-5	15.3-17.3	Grayish brown to yellowish brown silty clay with chert.	95.05	30	40.19	2.55	5.7×10^{-8}	7.61	35.7
B-5-1	12.2-13.4	Yellowish brown and grayish brown silty clay.	98.88	27	40.20	2.65	9.5×10^{-9}	6.03	32.2

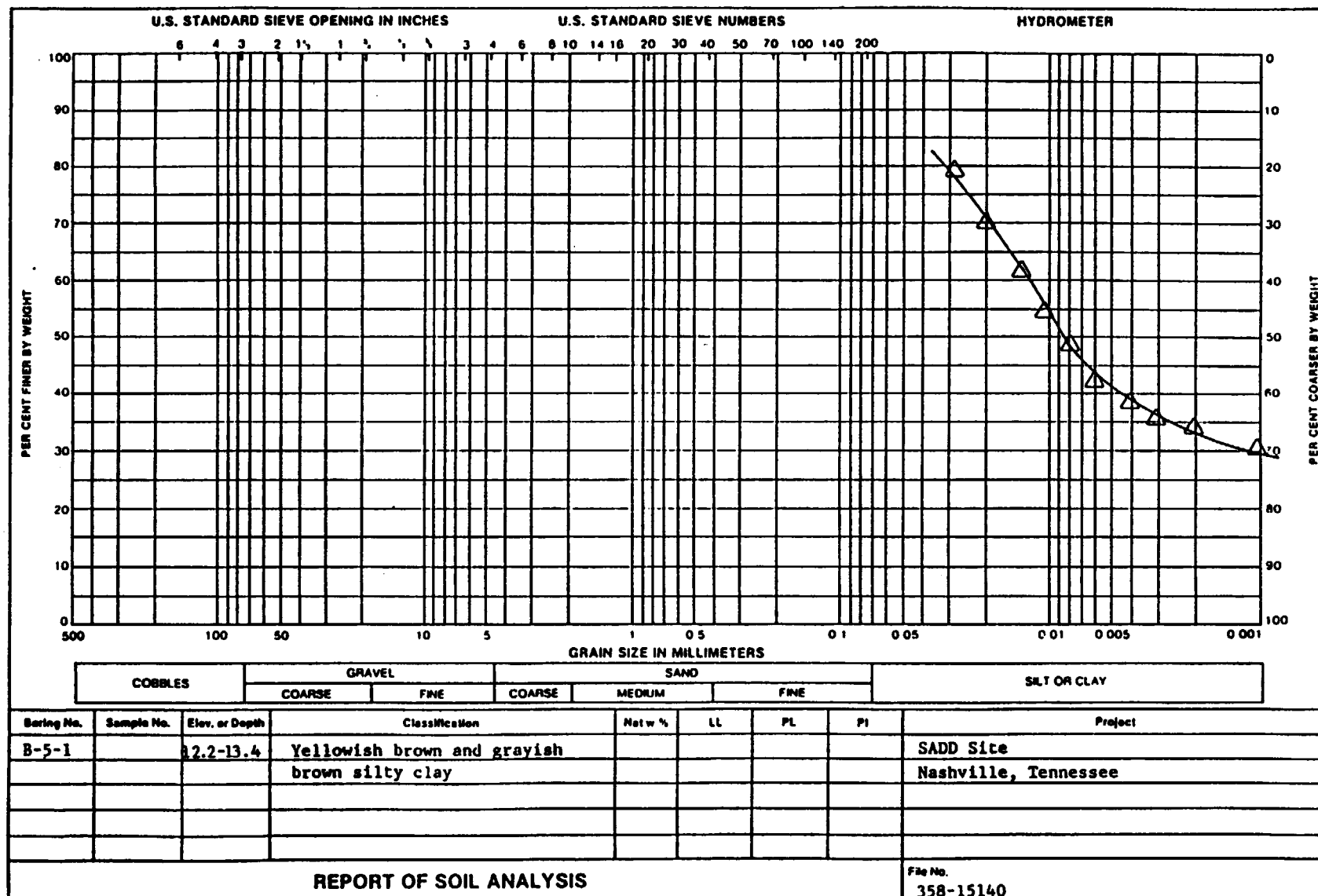


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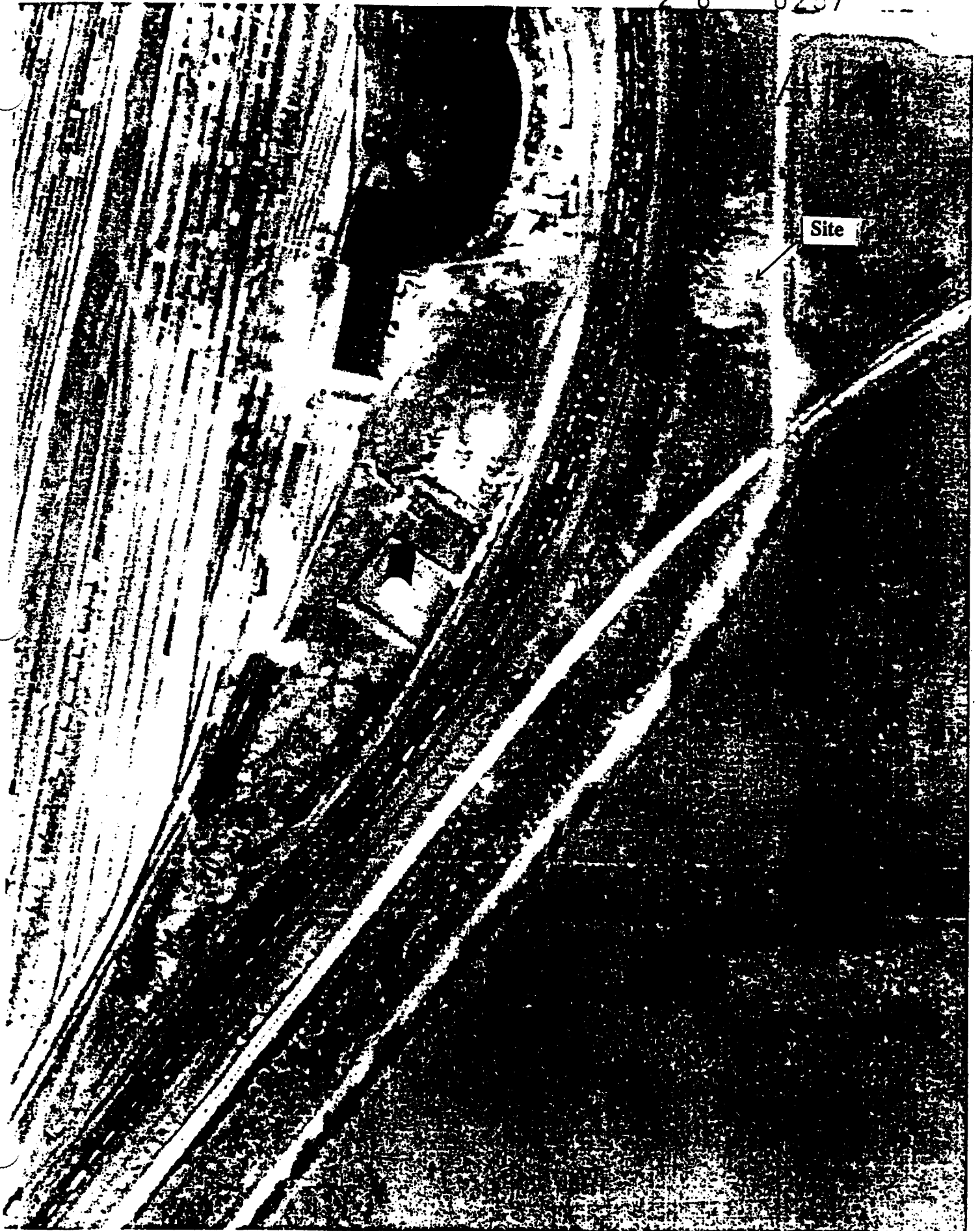


28 0255

APPENDIX F

AERIAL PHOTOGRAPHS/TOPOGRAPHIC MAPS

2 8 0257



Air Photograph 12-21-1957

Saad Trousdale Drive Site



Air Photograph 4-10-1963

Saad Trousedale Drive Site



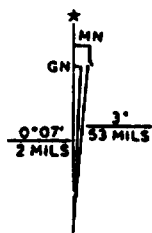
Air Photograph 1-11-1969

Saad Trousdale Drive Site

28 0260



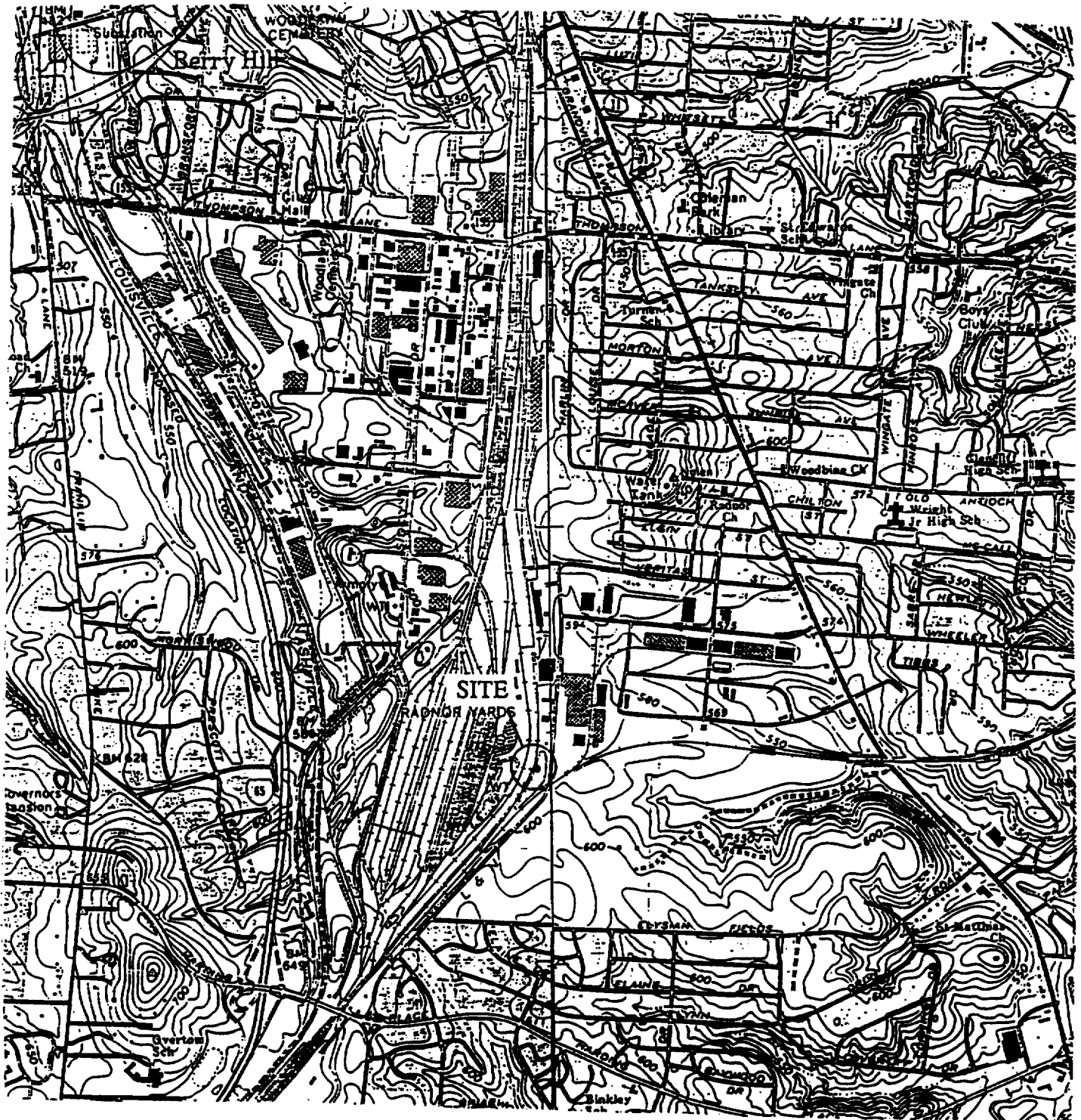
CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL



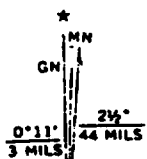
UTM GRID AND 1953 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

DRE technologies, inc.
FRANKLIN, TENNESSEE

SCALE: 1" = 2000'	DATE	TITLE
DWN:		1953 USGS TOPOGRAPHIC MAP OAK HILL QUADRANGLE
ENG/ DESIGN		CLIENT de maximis, inc.
CHK:		PROJECT NO.
DRE APPRV.		PROJECT SAAD TROUSDALE DRIVE SITE
CLIENT APPRV.		DRE PROJECT NO. 4008-070
		DWG. NO.
		REV.



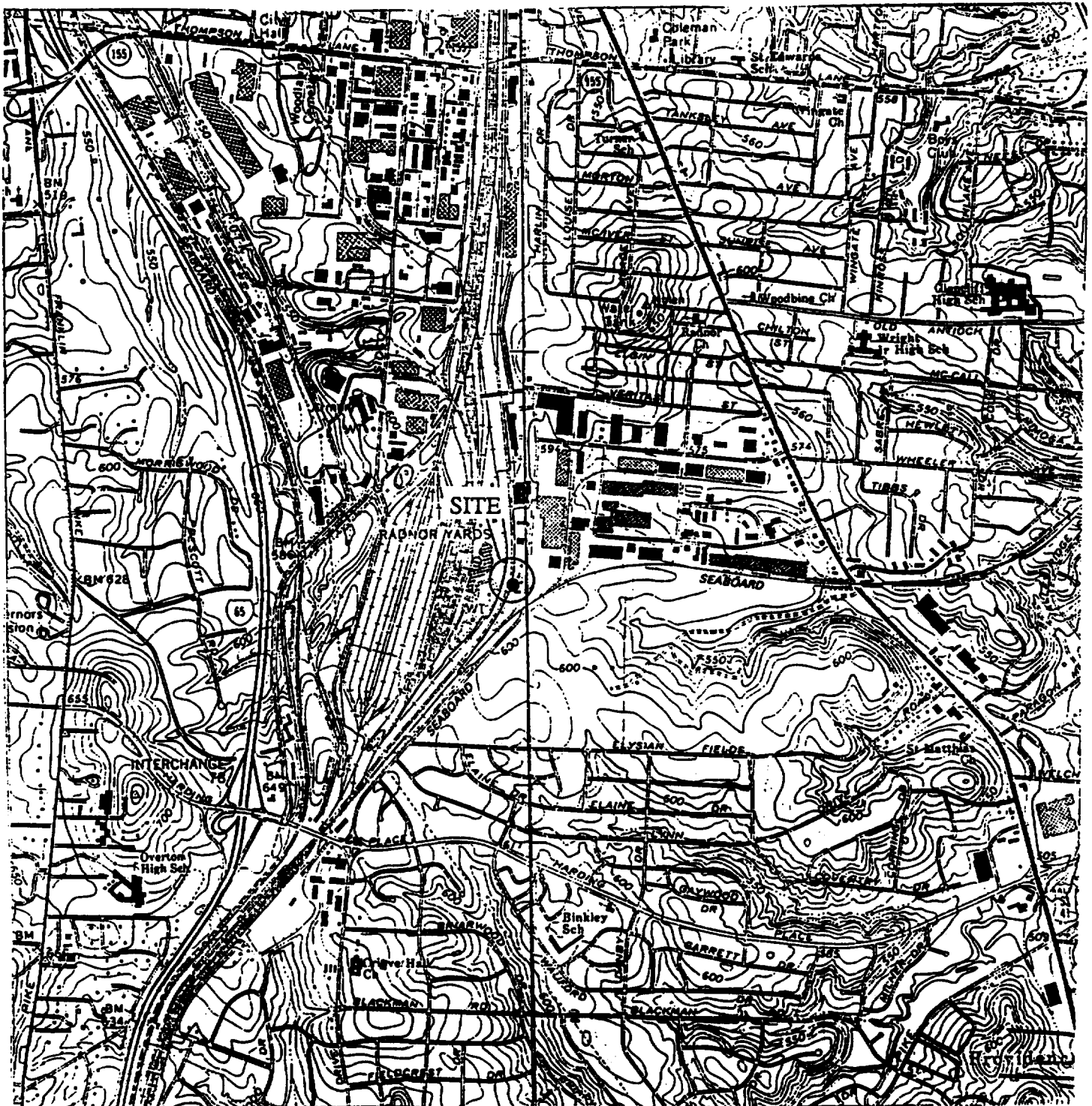
CONTOUR INTERVAL 10 FEET
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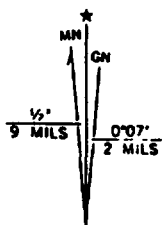
UTM GRID AND 1968 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

DRE technologies, inc.
FRANKLIN, TENNESSEE

SCALE: 1" = 2000'	DATE	TITLE
DWG:		1968 USGS TOPOGRAPHIC MAP
ENG/DESIGN		OAK HILL QUADRANGLE
CHK:		CLIENT de maximis, inc.
DRE APPRV.		PROJECT NO.
CLIENT APPRV.		PROJECT SAAD TROUSDALE DRIVE SITE
	DRE PROJECT NO. 4008-070	DWG. NO.
		REV.



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929



UTM GRID AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

DRE technologies, inc.
FRANKLIN, TENNESSEE

SCALE: 1" = 2000'	DATE	TITLE 1983 USGS PHOTO REVISION		
DWG:		TOPOGRAPHIC MAP		
ENG./DESIGN		OAK HILL QUADRANGLE		
CHK:		CLIENT de maximis, inc.	PROJECT NO.	
DRE APPRV.		PROJECT SAAD TROUSDALE DRIVE SITE		
CLIENT APPRV.		DRE PROJECT NO. 4008-070	DWG. NO.	REV.

APPENDIX G
ANALYTICAL DATA/CHAIN OF CUSTODY

SOS-01 SPECIMEN
CARBON

2 8

0264

SPECIMEN I.D. NUMBER
91810657

ACCESSION NO.
91 810657

REFERRING CLIENT

DATE COLLECTED

08/29/91

TIME COLLECTED

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08/29/91

E PUTNAM

0657

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	1.28		PPM
BARIUM	122		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	5.68		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.20		PPM
LEAD	15.5		PPM
SILVER	<1.0		PPM
COPPER	9.14		PPM
NICKEL	6.02		PPM
ZINC	216		PPM
IRON	3620		PPM
MANGANESE	69.6		PPM
ALUMINUM	2440		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	5370		PPM
COBALT	<5.0		PPM
MAGNESIUM	1015		PPM
POTASSIUM	92.3		PPM
SODIUM	244		PPM
THALLIUM	<1.0		PPM
VANADIUM	<5.0		PPM
CYANIDE	2.5		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.62		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CHLOROVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	4.0		PPM

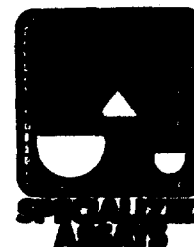
ORE TECHNOLOGIES, INC.

Telephone: 000 790 5600

T. JOE PUTNAM

33 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SOS-01 SPECIMEN
CARBON

2 8

0265

SPECIMEN I.D. NUMBER
91810657

ACCESSION NO.
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08/29/91

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CLIENT LAB NO.
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REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	120		PPM
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	2.3		PPM
1,2-DICHLOROETHYLENE	5.4		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	47		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	2.1		PPM
XYLENE	ND		
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	11		PPM
VINYL ACETATE	ND		
-HEXANONE	ND		
4-METHYL-2-PENTANONE	7.8		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.82		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	8.0		PPM
2,4,6-TRI CL PHENOL	ND		
ACENAPTHENE	ND		
ACENAPHTHYLENE	ND		

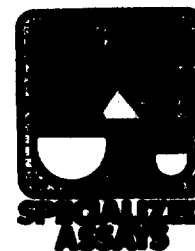
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SOS-01 SPECIMEN
CARBON

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0266

SPECIMEN I.D. NUMBER
91810657

ACCESSION NO.
91 810657

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
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08/29/91

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0657

CLIENT LAB NO.
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REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	1.5
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
2,3'-DICL BENZIDINE	ND
1-METHYL PHTHALATE	ND
0-METHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

PPM

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SOS-01 SPECIMEN
CARBON

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0267

SPECIMEN I.D. NUMBER
91810657

ACCESSION NO.
91 810657

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DATE COLLECTED
08/29/91

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08/29/91

PUTNAM

0657

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND
METHOD NUMBER 8080
QUANTITATION LIMIT <0.5
ALDRIN ND
ALPHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242 ND

PPM

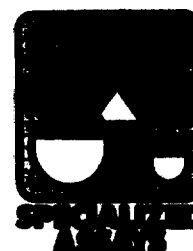
DRE TECHNOLOGIES, INC.

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SPECIMEN
SOS-01 CARBON

2 8

0268 SPECIMEN I.D. NUMBER
91810657

ACCESSION NO.
91 810657

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
00:00

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08/29/91

E PUTNAM

0657

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		
TCLP METALS			
ARSENIC	<0.10		PPM
BARIUM	<1.0		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	<0.50		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
TCLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	ND		
VINYL CHLORIDE	ND		
TCLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		

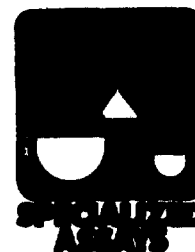
DRE TECHNOLOGIES, INC.

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3 HOLIDAY COURT
FRANKLIN

SUITE 200
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Phone 1-615-255-5786

SOS-01 SPECIMEN
CARBON

2 8

0269

SPECIMEN I.D. NUMBER
91810657

ACCESSION NO.
91 810657

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
00:00

RECEIVED
08/29/91

E PUTNAM

0657

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

HEXACHLOROETHANE
NITROBENZENE
PENTACHLOROPHENOL
2,4,5-TRICHLORPHENOL
2,4,6-TRI CL PHENOL
HEXACHLOROBENZENE

ND
ND
ND
ND
ND
ND

TCLP PESTICIDE/HERB
METHOD NUMBER
QUANTITATION LIMIT

8080

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
PESTICIDES.

CHLORDANE
ENDRIN
HEPTACHLOR
HEPTACHLOREPOXIDE
LINDANE
METHOXYCHLOR
TOXAPHENE
METHOD NUMBER
QUANTITATION LIMIT

<0.015
<0.010
<0.005
<0.005
<0.20
<1.0
<0.25
8150

PPM
PPM
PPM
PPM
PPM
PPM
PPM

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
HERBICIDES.

2,4,-D
2,4,5-TP(SILVEX)

<5.0
<0.5

PPM
PPM

Paul E. Smith
Environmental Lab
Supervisor

DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

JOE PUTNAM

3 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SOS-02 SAND

SPECIMEN

2 8

0270

SPECIMEN I.D. NUMBER
91810658

ACCESSION NO.
91 810658

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
00:00

RECEIVED
08/29/91

E PUTNAM

0658

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	<1.0		PPM
BARIUM	8.38		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	2.66		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.20		PPM
LEAD	20.1		PPM
SILVER	<1.0		PPM
COPPER	13.2		PPM
NICKEL	<1.0		PPM
ZINC	865		PPM
IRON	831		PPM
MANGANESE	9.76		PPM
ALUMINUM	378		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	2920		PPM
COBALT	<5.0		PPM
MAGNESIUM	527		PPM
POTASSIUM	111		PPM
ODIUM	286		PPM
THALLIUM	<1.0		PPM
VANADIUM	<5.0		PPM
CYANIDE	5.1		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DRE TECHNOLOGIES, INC.

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T. JOE PUTNAM

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FRANKLIN TN 37064

4437



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Phone 1-615-255-5786

SOS-02 SAND SPECIMEN 2 8

0271

SPECIMEN I.D. NUMBER
91810658

ACCESSION NO.
91 810658

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
00:00

RECEIVED
08/29/91

E PUTNAM

0658

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND
1,2-DICHLOROPROPANE	ND
1,3-DICHLOROPROPENE	ND
ETHYLBENZENE	ND
METHYL BROMIDE	ND
METHYL CHLORIDE	ND
METHYLENE CHLORIDE	ND
1,1,2,2 TET CL ETHAN	ND
TETRACHLOROETHYLENE	ND
TOLUENE	ND
1,2-DICHLOROETHYLENE	ND
1,1,1-TRI-CL-ETHANE	ND
1,1,2-TRI-CL-ETHANE	ND
TRICHLOROETHYLENE	ND
TRI-CL-F-METHANE	ND
VINYL CHLORIDE	ND
XYLENE	ND
ACETONE	ND
CARBON DISULFIDE	ND
2-BUTANONE (MEK)	ND
VINYL ACETATE	ND
-HEXANONE	ND
4-METHYL-2-PENTANONE	ND
STYRENE	ND

CLP EXTRACTABLES

METHOD NUMBER	8270
QUANTITATION LIMIT	0.33

PPM

2-CHLOROPHENOL	ND
2,4-DICHLOROPHENOL	ND
2,4-DIMETHYLPHENOL	ND
2,4-DINITROPHENOL	ND
2-NITROPHENOL	ND
4-NITROPHENOL	ND
P-CHLORO-M-CRESOL	ND
PENTACHLOROPHENOL	ND
PHENOL	ND
2,4,6-TRI CL PHENOL	ND
ACENAPTHENE	ND
ACENAPHTHYLENE	ND

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SOS-02 SAND SPECIMEN 2 8 0272 SPECIMEN I.D. NUMBER 91810658 ACCESSION NO. 91 810658

REFERRING CLIENT

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08/29/91

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09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE ND
 BENZEDINE ND
 BENZO(A)ANTHRACENE ND
 BENZO(A)PYRENE ND
 BENZO(B)FLUORANTHENE ND
 BENZO(GHI)PERYLENE ND
 BENZO(K)FLUORANTHENE ND
 BIS-2-CL-ETHOX METHA ND
 BIS(2-CL-ETHYL)ETHER ND
 BIS(2-CL-ISOPRO)ETHR ND
 BIS(2-ETH-HEX)PHTHAL ND
 4-BR-PHEN-PHEN-ETHER ND
 BUTYL-BENZ-PHTHALATE ND
 2-CHLORONAPHTHALENE ND
 4-CL-PHEN-PHEN-ETHER ND
 CHRYSENE ND
 DIBENZ(A,H)ANTHRACEN ND
 1,2-DICHLOROBENZENE ND
 1,3-DICHLOROBENZENE ND
 1,4-DICHLOROBENZENE ND
 3,3'-DICL BENZIDINE ND
 DIETHYL PHTHALATE ND
 DIMETHYL PHTHALATE ND
 BENZO(E)PYRENE ND
 DI-N-BUTYL PHTHALATE ND
 2,4-DINITROTOLUENE ND
 2,6-DINITROTOLUENE ND
 DI-N-OCTYL PHTHALATE ND
 1,2-DIPHEN-HYDRAZINE ND
 FLUORANTHENE ND
 FLUORENE ND
 HEXACHLOROBENZENE ND
 HEXACHLOROBUTADIENE ND
 HEXCLCYCLOPENTADIENE ND
 HEXACHLOROETHANE ND
 INDENO(1,2,3-CD)PYR ND
 ISOPHORONE ND
 NAPHTHALENE ND
 NITROBENZENE ND

1.7

PPM

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SOS-02	SPECIMEN SAND	2 8	0273	SPECIMEN I.D. NUMBER 91810658	ACCESSION NO. 91 810658
REFERRING CLIENT E PUTNAM			DATE COLLECTED 08/29/91	TIME COLLECTED 00:00	RECEIVED 08/29/91
			0658	CLIENT LAB NO. 00000	REPORTED 09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

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SPECIMEN
SOS-02 SAND

2 8

0274

SPECIMEN I.D. NUMBER
91810658ACCESSION NO.
91 810658

REFERRING CLIENT

E PUTNAM

DATE COLLECTED

08/29/91

TIME COLLECTED

00:00

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08/29/91CLIENT LAB NO.
00000REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		
TCLP METALS			
ARSENIC	<0.10		PPM
BARIUM	<1.0		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	<0.50		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
TCLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	ND		
VINYL CHLORIDE	ND		
TCLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		

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SOS-02 SAND

2 8

0275

SPECIMEN I.D. NUMBER
91810658

RECESSION NO.
91 810658

REFERRING CLIENT

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08/29/91

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0658

CLIENT LAB NO.
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REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

HEXACHLOROETHANE
NITROBENZENE
PENTACHLOROPHENOL
2,4,5-TRICHLORPHENOL
2,4,6-TRI CL PHENOL
HEXACHLOROBENZENE

ND
ND
ND
ND
ND
ND

TCLP PESTICIDE/HERB
METHOD NUMBER
QUANTITATION LIMIT

8080

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
PESTICIDES.

CHLORDANE
ENDRIN
HEPTACHLOR
HEPTACHLOREPOXIDE
LINDANE
METHOXYCHLOR
TOXAPHENE
METHOD NUMBER
QUANTITATION LIMIT

<0.015
<0.010
<0.005
<0.005
<0.20
<1.0
<0.25
8150

PPM
PPM
PPM
PPM
PPM
PPM
PPM

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
HERBICIDES.

2,4,-D
,4,5-TP(SILVEX)

<5.0
<0.5

PPM
PPM

Environmental Lab
Supervisor

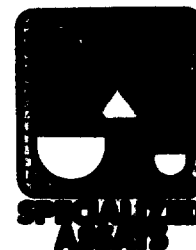
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SPECIMEN
SOS-03 SLUDGE 2 8

SPECIMEN I.D. NUMBER
0276 91810659

ACCESSION NO.
91 810659

REFERRING CLIENT

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DATE COLLECTED

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00:00

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09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	10.5	PPM
BARIUM	1745	PPM
CADMIUM	91.1	PPM
CHROMIUM, TOTAL	907	PPM
SELENIUM	<1.0	PPM
MERCURY	2.97	PPM
LEAD	7798	PPM
SILVER	5.19	PPM
COPPER	1235	PPM
NICKEL	305	PPM
ZINC	6024	PPM
IRON	39600	PPM
MANGANESE	456	PPM
ALUMINUM	5824	PPM
ANTIMONY	16.8	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	23400	PPM
COBALT	137	PPM
MAGNESIUM	2126	PPM
POTASSIUM	782	PPM
ODIUM	726	PPM
THALLIUM	<1.0	PPM
VANADIUM	16.1	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.63	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

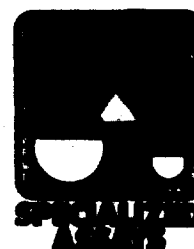
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SOS-03 SPECIMEN
SLUDGE

2 8

0277

SPECIMEN I.D. NUMBER
91810659

ACCESSION NO.
91 810659

REFERRING CLIENT

DATE COLLECTED
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0659

CLIENT LAB NO.
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09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	17		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	28		PPM
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	4.5		PPM
TOLUENE	680		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	22		PPM
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	1300		PPM
TRI-CL-F-METHANE	3.8		PPM
VINYL CHLORIDE	ND		
XYLENE	220		PPM
ACETONE	9.4		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	2.8		PPM
VINYL ACETATE	ND		
HEXANONE	ND		
4-METHYL-2-PENTANONE	9.4		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	100		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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SOS-03 SPECIMEN
SLUDGE

2 8

0278

SPECIMEN I.D. NUMBER
91810659

ACCESSION NO.
91 810659

REFERRING CLIENT

DATE COLLECTED
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08/29/91

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0659

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH1)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
,3'-DICL BENZIDINE	ND
IETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	102
NITROBENZENE	ND

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SOS-03 SPECIMEN
SLUDGE

2 8 0279

SPECIMEN I.D. NUMBER
91810659

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91 810659

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08/29/91

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0659

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND

N-NIT-DINPROPYLAMINE ND

N-NIT-DIPHENYLAMINE ND

PHENANTHRENE ND

PYRENE ND

1,2,4-TRICHLOROBENZ ND

ANILINE ND

BENZYL ALCOHOL ND

4-CHLOROANILINE ND

DIBENZOFURAN ND

2-METHYLNAPHTHALENE ND

2-NITROANILINE ND

4-NITROANILINE ND

BENZOIC ACID ND

2-METHYLPHENOL ND

4-METHYLPHENOL ND

2,4,5-TRICHLORPHENOL ND

3-NITROANILINE ND

METHOD NUMBER 8080

QUANTITATION LIMIT <3.0

PPM

PPM

DRIN ND

ALPHA BHC ND

BETA BHC ND

GAMMA BHC ND

DELTA BHC ND

CHLORDANE ND

4,4'DDT ND

4,4'DDE ND

4,4'DDD ND

DIELDRIN ND

ALPHA ENDOSULFAN ND

BETA ENDOSULFAN ND

ENDOSULFAN SULFATE ND

ENDRIN ND

ENDRIN ALDEHYDE ND

HEPTACHLOR ND

HEPTACHLOREPOXIDE ND

METHOXYCHLOR ND

PCB 1242 ND

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SOS-03 SPECIMEN
SLUDGE 2 8

0280

SPECIMEN I.D. NUMBER
91810659

ACCESSION NO.
91 810659

REFERRING CLIENT

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08/29/91

TIME COLLECTED
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0659

CLIENT LAB NO.
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09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		
TCLP METALS			
ARSENIC	<0.10		PPM
BARIUM	<1.0		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	0.96		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
TCLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	1.2		PPM
VINYL CHLORIDE	ND		
TCLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		

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SOS-03 SPECIMEN
SLUDGE

2 8

0281

SPECIMEN I.D. NUMBER
91810659

ACCESSION NO.
91 810659

REFERRING CLIENT

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08/29/91

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CLIENT LAB NO.
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REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

HEXACHLOROETHANE
NITROBENZENE
PENTACHLOROPHENOL
2,4,5-TRICHLORPHENOL
2,4,6-TRI CL PHENOL
HEXACHLOROBENZENE

ND
ND
ND
ND
ND
ND

TCLP PESTICIDE/HERB
METHOD NUMBER
QUANTITATION LIMIT

8080

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
PESTICIDES.

CHLORDANE
ENDRIN
HEPTACHLOR
HEPTACHLOREPOXIDE
LINDANE
METHOXYCHLOR
TOXAPHENE
METHOD NUMBER
QUANTITATION LIMIT

<0.015
<0.010
<0.005
<0.005
<0.20
<1.0
<0.25
8150

PPM
PPM
PPM
PPM
PPM
PPM
PPM

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
HERBICIDES.

2,4,-D
,4,5-TP(SILVEX)

<5.0
<0.5

PPM
PPM

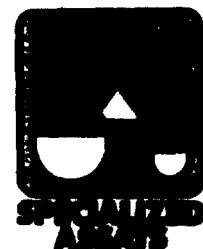
[Signature]
Environmental Lab
Supervisor

DRE TECHNOLOGIES, INC.

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SOS-06 SPECIMEN
HARDENED SLUDGE 2 8

0282 SPECIMEN I.D. NUMBER
91810660

ACCESSION NO.
91 810660

REFERRING CLIENT

DATE COLLECTED
08/29/91

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08/29/91

PUTNAM

0660

CLIENT LAB NO.
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REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	<1.0		PPM
BARIUM	<1.0		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	<1.0		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.20		PPM
LEAD	<1.0		PPM
SILVER	<1.0		PPM
COPPER	3.68		PPM
NICKEL	<1.0		PPM
ZINC	273		PPM
IRON	177		PPM
MANGANESE	1.94		PPM
ALUMINUM	<1.0		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	982		PPM
COBALT	<5.0		PPM
MAGNESIUM	111		PPM
POTASSIUM	<1.0		PPM
ODIUM	111		PPM
THALLIUM	<1.0		PPM
VANADIUM	<5.0		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	0.032		PPM
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DOE TECHNOLOGIES, INC.
JOE PUTNAM
HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

Telephone: 000 790 5600

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SOS-06 SPECIMEN
HARDENED SLUDGE 2 8

0283 SPECIMEN I.D. NUMBER
91810660

ACCESSION NO.
91 810660

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
00:00

RECEIVED
08/29/91

PUTNAM

0660

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND
1,2-DICHLOROPROPANE	ND
1,3-DICHLOROPROPENE	ND
ETHYLBENZENE	ND
METHYL BROMIDE	ND
METHYL CHLORIDE	ND
METHYLENE CHLORIDE	ND
1,1,2,2 TET CL ETHAN	ND
TETRACHLOROETHYLENE	ND
TOLUENE	ND
1,2-DICHLOROETHYLENE	ND
1,1,1-TRI-CL-ETHANE	ND
1,1,2-TRI-CL-ETHANE	ND
TRICHLOROETHYLENE	ND
TRI-CL-F-METHANE	ND
VINYL CHLORIDE	ND
XYLENE	ND
ACETONE	ND
CARBON DISULFIDE	ND
2-BUTANONE (MEK)	ND
INYL ACETATE	ND
-HEXANONE	ND
4-METHYL-2-PENTANONE	ND
STYRENE	ND

CLP EXTRACTABLES

METHOD NUMBER 8270
QUANTITATION LIMIT 0.33

PPM

2-CHLOROPHENOL	ND
2,4-DICHLOROPHENOL	ND
2,4-DIMETHYLPHENOL	ND
2,4-DINITROPHENOL	ND
2-NITROPHENOL	ND
4-NITROPHENOL	ND
P-CHLORO-M-CRESOL	ND
PENTACHLOROPHENOL	ND
PHENOL	ND
2,4,6-TRI CL PHENOL	ND
ACENAPHTHENE	ND
ACENAPHTHYLENE	ND

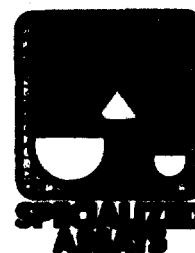
JOE TECHNOLOGIES, INC.

Telephone: 000 790 5600

JOE PUTNAM

3 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



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Phone 1-615-255-5786

SOS-06 SPECIMEN
HARDENED SLUDGE 2 8

0284 SPECIMEN I.D. NUMBER
91810660

ACCESSION NO.
91 810660

REFERRING CLIENT

DATE COLLECTED
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00:00

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PUTNAM

0660 CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	NO
BENZEDINE	NO
BENZO(A)ANTHRACENE	NO
BENZO(A)PYRENE	NO
BENZO(B)FLUORANTHENE	NO
BENZO(GHI)PERYLENE	NO
BENZO(K)FLUORANTHENE	NO
BIS-2-CL-ETHOX METHA	NO
BIS(2-CL-ETHYL)ETHER	NO
BIS(2-CL-ISOPRO)ETHR	NO
BIS(2-ETH-HEX)PHTHAL	NO
4-BR-PHEN-PHEN-ETHER	NO
BUTYL-BENZ-PHTHALATE	NO
2-CHLORONAPHTHALENE	NO
4-CL-PHEN-PHEN-ETHER	NO
CHRYSENE	NO
DIBENZ(A,H)ANTHRACEN	NO
1,2-DICHLOROBENZENE	NO
1,3-DICHLOROBENZENE	NO
1,4-DICHLOROBENZENE	NO
1,3'-DICL BENZIDINE	NO
1ETHYL PHTHALATE	NO
DIMETHYL PHTHALATE	NO
BENZO(E)PYRENE	NO
DI-N-BUTYL PHTHALATE	NO
2,4-DINITROTOLUENE	NO
2,6-DINITROTOLUENE	NO
DI-N-OCTYL PHTHALATE	NO
1,2-DIPHEN-HYDRAZINE	NO
FLUORANTHENE	NO
FLUORENE	NO
HEXACHLOROBENZENE	NO
HEXACHLOROBUTADIENE	NO
HEXCYCLOPENTADIENE	NO
HEXACHLOROETHANE	NO
INDENO(1,2,3-CD)PYR	NO
ISOPHORONE	NO
NAPHTHALENE	NO
NITROBENZENE	NO

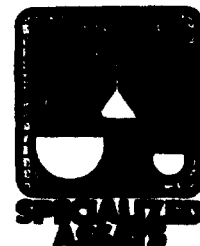
TECHNOLOGIES, INC.

Telephone: 000 790 5600

JOE PUTNAM

HOLIDAY COURT SUITE 200
FRANKLIN TN 37064 ,

4437



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Phone 1-615-255-5786

SOS-06 SPECIMEN
HARDENED SLUDGE 2 8

0285

SPECIMEN I.D. NUMBER
91810660

ACCESSION NO.
91 810660

REFERRING CLIENT

DATE COLLECTED
08/29/91

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08/29/91

E PUTNAM

0660

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

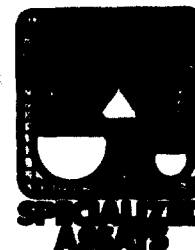
DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

T. JOE PUTNAM

HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



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Phone 1-615-255-5786

SPECIMEN
SOS-06 HARDENED SLUDGE 2 8

0286 SPECIMEN I.D. NUMBER
91810660

ACCESSION NO.
91 810660

REFERRING CLIENT

E PUTNAM

DATE COLLECTED

08/29/91

TIME COLLECTED

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08/29/91

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		
TCLP METALS			
ARSENIC	<0.10		PPM
BARIUM	<1.0		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	<0.50		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
TCLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	ND		
VINYL CHLORIDE	ND		
TCLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		

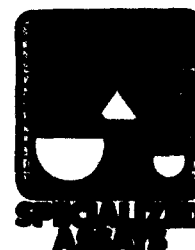
DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

JOE PUTNAM

HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



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Phone 1-615-255-5786

SOS-06 SPECIMEN
HARDENED SLUDGE 2 8

0287 SPECIMEN I.D. NUMBER
91810660

ACCESSION NO.
91 810660

REFERRING CLIENT

DATE COLLECTED
08/29/91

TIME COLLECTED
00:00

RECEIVED
08/29/91

PUTNAM

0660

CLIENT LAB NO.
00000

REPORTED
09/13/91

TEST

RESULT

REFERENCE LIMITS

UNITS

HEXACHLOROETHANE
NITROBENZENE
PENTACHLOROPHENOL
2,4,5-TRICHLORPHENOL
2,4,6-TRI CL PHENOL
HEXACHLOROBENZENE

ND
ND
ND
ND
ND
ND

TCLP PESTICIDE/HERB
METHOD NUMBER
QUANTITATION LIMIT

8080

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
PESTICIDES.

CHLORDANE
ENDRIN
HEPTACHLOR
HEPTACHLOREPOXIDE
LINDANE
METHOXYCHLOR
TOXAPHENE
METHOD NUMBER
QUANTITATION LIMIT

<0.015
<0.010
<0.005
<0.005
<0.20
<1.0
<0.25
8150

PPM
PPM
PPM
PPM
PPM
PPM
PPM

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
HERBICIDES.

2,4,-D
,4,5-TP(SILVEX)

<5.0
<0.5

PPM
PPM

Paul E. H.
Environmental Lab
Supervisor

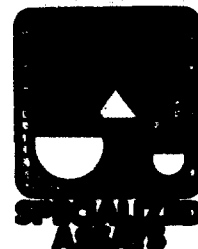
DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

T. JOE PUTNAM

3 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

28 0288
LENSITE DRUM CHARACTERIZATION

REFERRING CLIENT

:count Number 004522

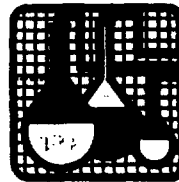
FOUR SEASONS

ATT. STANLY EASTEP

7118 CROSS ROADS BLVD.

BRENTWOOD

TN 37027



210 12th Ave., South

P.O. Box 25110

Nashville, TN 37202

1-815-255-5786

Form 3035B Rev. 2/87

[illegible]

SPECIMEN
SLUDGE COMP. ENSITE EDS-01

SPECIMEN I.D. NUMBER
91810785 2 8 0289

ACCESSION NO.
91 810785

REFERRING CLIENT

DATE COLLECTED
09/04/91

TIME COLLECTED
00:00

RECEIVED
09/04/91

JOE PUTNAM

0785

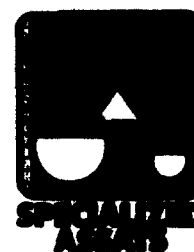
CLIENT LAB NO.
00000

REPORTED
09/10/91

TEST	RESULT	REFERENCE LIMITS	UNITS
TCLP METALS			
ARSENIC	<0.10		PPM
BARIUM	<1.0		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	0.61		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
TCLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	ND		
VINYL CHLORIDE	ND		
TCLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXACHLOROETHANE	ND		
NITROBENZENE	ND		
PENTACHLOROPHENOL	ND		
2,4,5-TRICHLOROPHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
HEXACHLOROBENZENE	ND		
TCLP PESTICIDE/HERB			

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-815-255-5786

SPECIMEN
SLUDGE COMP. ENSITE EDS-01

SPECIMEN I.D. NUMBER
918107852 8

ACCESSION NO.
91 810785

REFERRING CLIENT

DATE COLLECTED
09/04/91

TIME COLLECTED
00:00

RECEIVED
09/04/91

CLIENT LAB NO.
00000

REPORTED
09/10/91

E PUTNAM

0785

TEST

RESULT

REFERENCE LIMITS

UNITS

METHOD NUMBER
QUANTITATION LIMIT

8080
LESS THAN VALUES ARE QUANTITATION LIMITS FOR
PESTICIDES.

CHLORDANE
ENDRIN
HEPTACHLOR
HEPTACHLOREPOXIDE
LINDANE
METHOXYCHLOR
TOXAPHENE
METHOD NUMBER
QUANTITATION LIMIT

<0.015
<0.010
<0.005
<0.005
<0.20
<1.0
<0.25
8150

PPM
PPM
PPM
PPM
PPM
PPM
PPM

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
HERBICIDES.

2,4,-D
2,4,5-TP(SILVEX)

<5.0
<0.5

PPM
PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5788

726-0179

SPECIMEN
ENSITE DEBRIS SLUDGE COMP.

SPECIMEN I.D. NUMBER
91811740 2 8

ACCESSION NO.
91 811740

REFERRING CLIENT

DATE COLLECTED
09/04/91

TIME COLLECTED
00:00

RECEIVED
09/13/91

PUTNAM

1740

CLIENT LAB NO.
00000

REPORTED
09/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB (SOLID MATRIX)
PCB

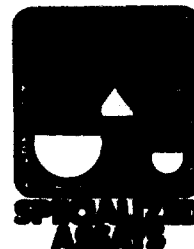
<1.0

PPM

Paul E. L. J.
Environmental Lab
Supervisor

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIALIZED ASSAYS

2 8 0292

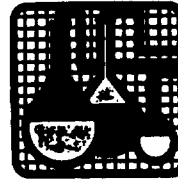
REFERRING CLIENT

740-5600

DTE Technologies Inc

ATTN: Joe Putnam

1331 Trinity Court Suite 700
Memphis, TN 37018



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)				PROJECT # 00037-TEL		P.O. # 4005-DZU	
SAMPLERS (Signature) <i>J. J. Putnam</i>				PROJECT NAME CADD			
FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	FOR CONT.	ANALYSES REQUESTED
✓	Excess Detergent Sludge Composite	6/4/91	9:00 AM	X		2	Full TCLP Accelerate (Two 100 ml samples)
							Two 100 ml samples
Relinquished by: (Signature) <i>J. J. Putnam</i>	Date/Time 6/4/91	Received by: (Signature) <i>[Signature]</i>	Received for Laboratory by: (Signature)		Date/Time		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Remarks Composite Sludge material; Excess detergent from Excess sludge. Send ASAP.				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)					
Relinquished by: (Signature)	Date/Time	Received by: (Signature)					
Relinquished by: (Signature)	Date/Time	Received by: (Signature)					

DBS-01

SPECIMEN

SPECIMEN I.D. NUMBER

91811677

2 8

0293

ACCESSION NO.

91 811677

REFERRING CLIENT

DATE COLLECTED

09/12/91

TIME COLLECTED

00:00

RECEIVED

09/12/91

CLIENT LAB NO.

00000

REPORTED

09/23/91

JOE PUTNAM

1677

TEST

RESULT

REFERENCE LIMITS

UNITS

TCLP METALS

ARSENIC	<0.10		PPM
BARIUM	1.84		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	3.20		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
COPPER	<0.50		PPM
NICKEL	<0.50		PPM
THALLIUM	<0.50		PPM
ZINC	<0.50		PPM

TCLP VOLATILES

METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	ND		
VINYL CHLORIDE	ND		

TCLP EXTRACTABLES

METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXACHLOROETHANE	ND		
NITROBENZENE	ND		
PENTACHLOROPHENOL	ND		

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437

210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

DBS-01

SPECIMEN

SPECIMEN I.D. NUMBER

91811677 2 8

0294 91 811677

REFERRING CLIENT

DATE COLLECTED

09/12/91

TIME COLLECTED

00:00

RECEIVED

09/12/91

JOE PUTNAM

1677

CLIENT LAB NO.

00000

REPORTED

09/25/91

TEST

RESULT

REFERENCE LIMITS

UNITS

2,4,5-TRICHLORPHENOL

ND

2,4,6-TRI CL PHENOL

ND

HEXACHLOROBENZENE

ND

TCLP PESTICIDE/HERB

METHOD NUMBER

8080

QUANTITATION LIMIT

LESS THAN VALUES ARE QUANTITATION LIMITS FOR PESTICIDES.

CHLORDANE

<0.015

PPM

ENDRIN

<0.010

PPM

HEPTACHLOR

<0.005

PPM

HEPTACHLOREPOXIDE

<0.005

PPM

LINDANE

<0.20

PPM

METHOXYCHLOR

<1.0

PPM

TOXAPHENE

<0.25

PPM

METHOD NUMBER

8150

QUANTITATION LIMIT

LESS THAN VALUES ARE QUANTITATION LIMITS FOR HERBICIDES.

2,4,-D

<5.0

PPM

2,4,5-TP(SILVEX)

<0.5

PPM

SPECIFIC GRAVITY

2.23

PH

7.8

PH UNITS

PERCENT MOISTURE

10.3

%

FLASH POINT

SAMPLE HEATED TO 160F WITHOUT FLASH OR IGNITION.

ASH

56

PERCENT

B.T.U. DETERMINATION

4070

BTU'S/POU

CHLORIDE

650

PPM

REACTIVITY TEST

REACTIVE CYANIDE

<2.0

PPM

REACTIVE SULFIDE

<2.0

PPM

CYANIDE

3.8

PPM

SULFIDE

12

PPM

PCB (SOLID MATRIX)

PCB

6.2

PPM

AROCHLOR IDENTIFIED

1242

PHENOLS

3.0

PPM

VOLATILE ORGANICS

METHOD NUMBER

8240

QUANTITATION LIMIT

0.62

PPM

BENZENE

ND

DRE TECHNOLOGIES, INC.

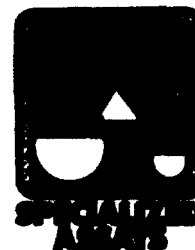
ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5788

DBS-01

SPECIMEN

SPECIMEN I.D. NUMBER

91811677

2 8

0295

ACCESSION NO.

91 811677

REFERRING CLIENT

DATE COLLECTED

09/12/91

TIME COLLECTED

00:00

RECEIVED

09/12/91

E PUTNAM

1677

CLIENT LAB NO.

00000

REPORTED

09/25/91

TEST	RESULT	REFERENCE LIMITS	UNITS
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	ND		
1,2-DICHLOROETHYLENE	1.9		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	3.1		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		

DRE TECHNOLOGIES, INC.

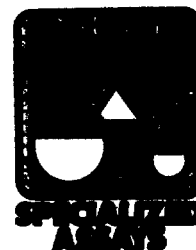
ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203

Phone 1-615-255-5786

SPECIALIZED ASSAYS

2 8 0296



**210 12th Ave., South
P.O. Box 25110 :
Nashville, TN 37202
1-615-255-5786**

Form 3035B Rev. 2/87

REFERRING CLIENT

RE Technologies Inc
133 Hildray Ct. Suite 200
Fremont, Ca 94566
Attn: Joe Pittman

[illegible]

OVS-01

SPECIMEN

SPECIMEN I.D. NUMBER

91811258

2 8

0297

91 811258

REFERRING CLIENT

DATE COLLECTED

09/09/91

TIME COLLECTED

00:00

RECEIVED

09/09/91

CLIENT LAB NO.

00000

REPORTED

09/12/91

E PUTNAM

1258

TEST

RESULT

REFERENCE LIMITS

UNITS

TCLP METALS

ARSENIC

<0.10

PPM

BARIUM

<1.0

PPM

CADMIUM

<0.10

PPM

CHROMIUM, TOTAL

<0.50

PPM

LEAD

<0.50

PPM

MERCURY

<0.010

PPM

SELENIUM

<0.10

PPM

SILVER

<0.10

PPM

TCLP VOLATILES

METHOD NUMBER

8240

QUANTITATION LIMIT

0.10

PPM

BENZENE

ND

CARBON TETRACHLORIDE

ND

CHLOROBENZENE

ND

CHLOROFORM

0.15

PPM

1,2-DICHLOROETHANE

ND

1,1-DI-CL-ETHYLENE

ND

2-BUTANONE (MEK)

<1.0

PPM

TETRACHLOROETHYLENE

ND

TRICHLOROETHYLENE

ND

VINYL CHLORIDE

ND

TCLP EXTRACTABLES

METHOD NUMBER

8270

QUANTITATION LIMIT

0.10

PPM

PYRIDINE

ND

O-CRESOL

ND

M-CRESOL

ND

P-CRESOL

ND

1,4-DICHLOROBENZENE

ND

2,4-DINITROTOLUENE

ND

HEXACHLOROBUTADIENE

ND

HEXACHLOROETHANE

ND

NITROBENZENE

ND

PENTACHLOROPHENOL

ND

2,4,5-TRICHLOROPHENOL

ND

2,4,6-TRI CL PHENOL

ND

HEXACHLOROBENZENE

ND

TCLP PESTICIDE/HERB

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203

Phone 1-615-255-5786

OVS-01	SPECIMEN	SPECIMEN I.D. NUMBER	91811258 2 8 0298	ACCESSION NO.	91 811258
REFERRING CLIENT	DATE COLLECTED	TIME COLLECTED	09/09/91	RECEIVED	09/09/91
PUTNAM	1258	CLIENT LAB NO.	00000	REPORTED	09/12/91

TEST	RESULT	REFERENCE LIMITS	UNITS
METHOD NUMBER	8080		
QUANTITATION LIMIT	LESS THAN VALUES ARE QUANTITATION LIMITS FOR PESTICIDES.		
CHLORDANE	<0.015		PPM
ENDRIN	<0.010		PPM
HEPTACHLOR	<0.005		PPM
HEPTACHLOREPOXIDE	<0.005		PPM
LINDANE	<0.20		PPM
METHOXYCHLOR	<1.0		PPM
TOXAPHENE	<0.25		PPM
METHOD NUMBER	8150		
QUANTITATION LIMIT	LESS THAN VALUES ARE QUANTITATION LIMITS FOR HERBICIDES.		
2,4,-D	<5.0		PPM
2,4,5-TP(SILVEX)	<0.5		PPM

DRE TECHNOLOGIES, INC.
 ATT. JOE PUTNAM
 133 HOLIDAY COURT SUITE 200
 FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
 Phone 1-615-255-5786

SPECIMEN
OWST-01

SPECIMEN I.D. NUMBER
91811259 2 8

ACCESSION NO.
91 811259

REFERRING CLIENT

DATE COLLECTED
09/09/91

TIME COLLECTED
00:00

RECEIVED
09/09/91

E PUTNAM

1259

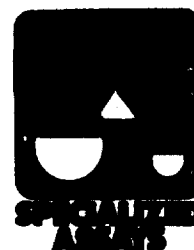
CLIENT LAB NO.
00000

REPORTED
09/12/91

TEST	RESULT	REFERENCE LIMITS	UNITS
TCLP METALS			
ARSENIC	<0.10		PPM
BARIUM	<1.0		PPM
CADMIUM	<0.10		PPM
CHROMIUM, TOTAL	<0.50		PPM
LEAD	<0.50		PPM
MERCURY	<0.010		PPM
SELENIUM	<0.10		PPM
SILVER	<0.10		PPM
TCLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLOROFORM	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
2-BUTANONE (MEK)	<1.0		PPM
TETRACHLOROETHYLENE	ND		
TRICHLOROETHYLENE	ND		
INYL CHLORIDE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.10		PPM
PYRIDINE	ND		
O-CRESOL	ND		
M-CRESOL	ND		
P-CRESOL	ND		
1,4-DICHLOROBENZENE	ND		
2,4-DINITROTOLUENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXACHLOROETHANE	ND		
NITROBENZENE	ND		
PENTACHLOROPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
HEXACHLOROBENZENE	ND		
TCLP PESTICIDE/HERB			

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



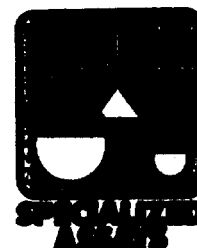
210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

OWST-01	SPECIMEN	SPECIMEN I.D. NUMBER	918112592 8	0300	ACCESSION NO.	91 811259
REFERRING CLIENT	DATE COLLECTED	TIME COLLECTED	09/09/91	00:00	RECEIVED	09/09/91
PUTNAM	1259	CLIENT LAB NO.	00000		REPORTED	09/12/91

TEST	RESULT	REFERENCE LIMITS	UNITS
METHOD NUMBER	8080		
QUANTITATION LIMIT	LESS THAN VALUES ARE QUANTITATION LIMITS FOR PESTICIDES.		
CHLORDANE	<0.015		PPM
ENDRIN	<0.010		PPM
HEPTACHLOR	<0.005		PPM
HEPTACHLOREPOXIDE	<0.005		PPM
LINDANE	<0.20		PPM
METHOXYCHLOR	<1.0		PPM
TOXAPHENE	<0.25		PPM
METHOD NUMBER	8150		
QUANTITATION LIMIT	LESS THAN VALUES ARE QUANTITATION LIMITS FOR HERBICIDES.		
2,4,-D	<5.0		PPM
2,4,5-TP(SILVEX)	<0.5		PPM

DRE TECHNOLOGIES, INC.
 ATT. JOE PUTNAM
 133 HOLIDAY COURT SUITE 200
 FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
 Phone 1-615-255-5786

SPECIMEN
OWS-SLD SLUDGE

SPECIMEN I.D. NUMBER
91811385 2 8

ACCESSION NO.
91 811385

REFERRING CLIENT

DATE COLLECTED

09/10/91

TIME COLLECTED

00:00

RECEIVED

09/10/91

CLIENT LAB NO.

00000

REPORTED

09/24/91

E PUTNAM

1385

TEST

RESULT

REFERENCE LIMITS

UNITS

BTEX SOIL

METHOD NUMBER
QUANTITATION LIMIT

8020

1.0

PPM

BENZENE

ND

TOLUENE

2.8

PPM

ETHYLBENZENE

1.8

PPM

XYLENE

1.1

PPM

TRPH SOIL

7464

PPM

METHOD 9071/418.1

QUANTITATION LIMIT 10 PPM

TCLP METALS

ARSENIC

<0.10

PPM

BARIUM

<1.0

PPM

CADMIUM

<0.10

PPM

CHROMIUM, TOTAL

<0.50

PPM

LEAD

<0.50

PPM

MERCURY

<0.010

PPM

SELENIUM

<0.10

PPM

SILVER

<0.10

PPM

TCLP VOLATILES

METHOD NUMBER

8240

QUANTITATION LIMIT

0.10

PPM

BENZENE

ND

CARBON TETRACHLORIDE

ND

CHLOROBENZENE

ND

CHLOROFORM

ND

1,2-DICHLOROETHANE

ND

1,1-DI-CL-ETHYLENE

ND

2-BUTANONE (MEK)

<1.0

PPM

TETRACHLOROETHYLENE

ND

TRICHLOROETHYLENE

ND

VINYL CHLORIDE

ND

TCLP EXTRACTABLES

METHOD NUMBER

8270

QUANTITATION LIMIT

0.10

PPM

PYRIDINE

ND

O-CRESOL

ND

M-CRESOL

ND

P-CRESOL

ND

1,4-DICHLOROBENZENE

ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

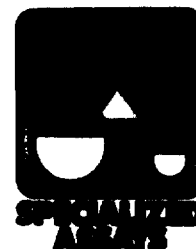
133 HOLIDAY COURT

FRANKLIN

SUITE 200

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203

Phone 1-615-255-5786

SPECIMEN
OWS-SLD SLUDGE

SPECIMEN I.D. NUMBER
91811385 2 8

ACCESSION NO.
0302 91 811385

REFERRING CLIENT

DATE COLLECTED
09/10/91

TIME COLLECTED
00:00

RECEIVED
09/10/91

PUTNAM

1385

CLIENT LAB NO.
00000

REPORTED
09/24/91

TEST

RESULT

REFERENCE LIMITS

UNITS

2,4-DINITROTOLUENE NO
HEXACHLOROBUTADIENE NO
HEXACHLOROETHANE NO
NITROBENZENE NO
PENTACHLOROPHENOL NO
2,4,5-TRICHLORPHENOL NO
2,4,6-TRI CL PHENOL NO
HEXACHLOROBENZENE NO

TCLP PESTICIDE/HERB

METHOD NUMBER

8080

QUANTITATION LIMIT

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
PESTICIDES.

CHLORDANE <0.015 PPM
ENDRIN <0.010 PPM
HEPTACHLOR <0.005 PPM
HEPTACHLOREPOXIDE <0.005 PPM
LINDANE <0.20 PPM
METHOXYCHLOR <1.0 PPM
TOXAPHENE <0.25 PPM

METHOD NUMBER

8150

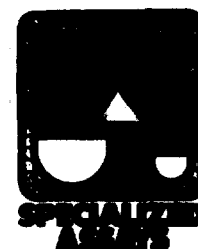
QUANTITATION LIMIT

LESS THAN VALUES ARE QUANTITATION LIMITS FOR
HERBICIDES.

2,4,-D <5.0 PPM
2,4,5-TP(SILVEX) <0.5 PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



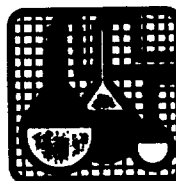
210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

2 8 0303

REFERRING CLIENT

103 Park Ave
New York City, N.Y.
June 20, 1964

ATTN: Mr. Putnam



**210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786**

Form 3035B Rev. 2/87

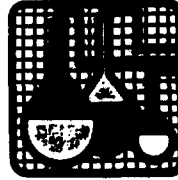
[illegible]

SPECIALIZED ASSAYS

2 8 0304

REFERRING CLIENT

TECHNOLOGIES INC
133 HILLMAN CT - SUITE 200
FIRDAHLITE, TN 37064
ATTN: Joe Putnam



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5788

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)

PROJECT #

P.O. #

00037-FEL

1001-050

SAMPLERS (Signature)

PROJECT NAME

Joe Putnam

LAAP TAFI

FOR LAB USE ONLY
ACC #

SAMPLE DESCRIPTION

DATE

TIME

COMP

GRAB

USE CONT.

ANALYSES REQUESTED

DWS-SCD
(2.1.0.0.0.0)

9/10/91 8:00

X

X

3

TPH, ETEL, TLLP

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Received for Laboratory by: (Signature)

Date/Time

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Remarks

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

3 containers = sample
reg. TAFI

SPECIMEN
OWS-PN-01

SPECIMEN I.D. NUMBER
91811383 2 8

ACCESSION NO.
0305 91 811383

REFERRING CLIENT

DATE COLLECTED
09/10/91

TIME COLLECTED
00:00

RECEIVED
09/10/91

PUTNAM

1383

CLIENT LAB NO.
00000

REPORTED
09/20/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

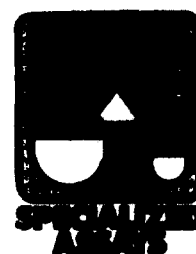
ARSENIC	6.02	PPM
BARIUM	261	PPM
CADMIUM	<1.0	PPM
CHROMIUM, TOTAL	25.2	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	25.7	PPM
SILVER	<1.0	PPM
COPPER	14.0	PPM
NICKEL	16.0	PPM
ZINC	49.1	PPM
IRON	19845	PPM
MANGANESE	1908	PPM
ALUMINUM	19095	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	1.26	PPM
CALCIUM	14761	PPM
COBALT	13.1	PPM
MAGNESIUM	1290	PPM
POTASSIUM	1780	PPM
SODIUM	304	PPM
THALLIUM	<1.0	PPM
VANADIUM	30.9	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.62	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN

OWS-PN-01

SPECIMEN I.D. NUMBER

918113832 8

ACCESSION NO.

91 811383

REFERRING CLIENT

DATE COLLECTED

09/10/91

TIME COLLECTED

00:00

RECEIVED

09/10/91

CLIENT LAB NO.

00000

REPORTED

09/20/91

E PUTNAM

1383

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	1.8		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	22		PPM
1,2-DICHLOROETHYLENE	15		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	10		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	3.1		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
OWS-PN-01

SPECIMEN I.D. NUMBER
91811383 2 8

ACCESSION NO.
0307 91 811383

REFERRING CLIENT

DATE COLLECTED
09/10/91

TIME COLLECTED
00:00

RECEIVED
09/10/91

E PUTNAM

1383

CLIENT LAB NO.
00000

REPORTED
09/20/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
1NDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
OWS-PN-01

SPECIMEN I.D. NUMBER
918113832 8

ACCESSION NO.
0308 91 811383

REFERRING CLIENT

DATE COLLECTED
09/10/91

TIME COLLECTED
00:00

RECEIVED
09/10/91

E PUTNAM

CLIENT LAB NO.
00000

REPORTED
09/20/91

TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	4.3		PPM
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
LDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'ODT	ND		
4,4'ODE	ND		
4,4'ODD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
OWS-PN-01

SPECIMEN I.D. NUMBER
91811383 2 8

ACCESSION NO.
91 811383

REFERRING CLIENT

DATE COLLECTED
09/10/91

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CLIENT LAB NO.
00000

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TEST

RESULT

REFERENCE LIMITS

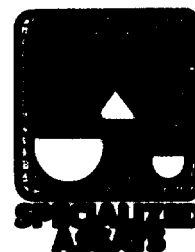
UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

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SPECIMEN

OWS-PS-01

SPECIMEN I.D. NUMBER

91811384

2 8

0310

COLLECTION NO.

91 811384

REFERRING CLIENT

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CLIENT LAB NO.

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09/20/91

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1384

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	26.9		PPM
BARIUM	298		PPM
CADMIUM	1.84		PPM
CHROMIUM, TOTAL	47.3		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	790		PPM
SILVER	<1.0		PPM
COPPER	83.3		PPM
NICKEL	31.7		PPM
ZINC	190		PPM
IRON	31500		PPM
MANGANESE	583		PPM
ALUMINUM	21720		PPM
ANTIMONY	6.35		PPM
BERYLLIUM	1.30		PPM
CALCIUM	55080		PPM
COBALT	12.8		PPM
MAGNESIUM	3420		PPM
POTASSIUM	2332		PPM
SODIUM	218		PPM
THALLIUM	<1.0		PPM
VANADIUM	32.5		PPM
CYANIDE	2.3		PPM

CLP VOLATILES

METHOD NUMBER	8240		
QUANTITATION LIMIT	0.62		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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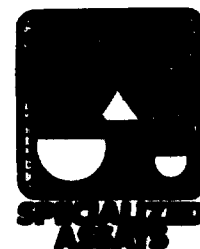
ATT. JOE PUTNAM

133 HOLIDAY COURT
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SPECIMEN
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SPECIMEN I.D. NUMBER

91811384 2 8 0311

ACCESSION NO.
91 811384

REFERRING CLIENT

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TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	1.9		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	13		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	3.3		PPM
VINYL CHLORIDE	ND		
XYLENE	10		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
1-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	8.2		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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SPECIMEN
OWS-PS-01

SPECIMEN I.D. NUMBER
91811384 2 8

ACCESSION NO.
0312 91 811384

REFERRING CLIENT

DATE COLLECTED

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TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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SPECIMEN
OWS-PS-01

SPECIMEN I.D. NUMBER
91811384 2 8

ACCESSION NO.
91 811384

REFERRING CLIENT

DATE COLLECTED
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CLIENT LAB NO.
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TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	<0.5
LDRLIN	ND
ALPHA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'DDT	ND
4,4'DDE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND

PPM

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SPECIMEN
OWS-PS-01

SPECIMEN I.D. NUMBER

91811384 2 8

ACCESSION NO.

91 811384

REFERRING CLIENT

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DATE COLLECTED

09/10/91

TIME COLLECTED

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09/10/91

CLIENT LAB NO.

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REPORTED
09/20/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	437		PPM
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		

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T2-S2 SPECIMEN
T1-S2 TRENCH 2 8' below Ground

SPECIMEN I.D. NUMBER
91812344 2 8

ACCESSION NO.
0316 91 812344

REFERRING CLIENT

DATE COLLECTED
09/18/91

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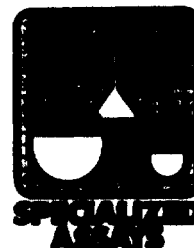
CLIENT LAB NO.
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REPORTED
10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	4.56		PPM
BARIUM	93.4		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	21.7		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	48.9		PPM
SILVER	<1.0		PPM
COPPER	20.8		PPM
NICKEL	14.3		PPM
ZINC	70.9		PPM
IRON	16318		PPM
MANGANESE	578		PPM
ALUMINUM	9420		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	56300		PPM
COBALT	7.88		PPM
MAGNESIUM	2788		PPM
POTASSIUM	1229		PPM
SODIUM	343		PPM
THALLIUM	<1.0		PPM
VANADIUM	19.3		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	63		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CHLOROVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DRE TECHNOLOGIES, INC.
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FRANKLIN TN 37064

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12-54
T1-S2

SPECIMEN
TRENCH-2 8' below G

SPECIMEN I.D. NUMBER
91812344 2 8

031791 812344

REFERRING CLIENT

DATE COLLECTED
09/18/91

TIME COLLECTED
00:00

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09/19/91

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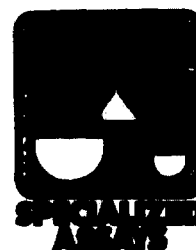
CLIENT LAB NO.
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REPORTED
10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	280		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	4100		PPM
1,2-DICHLOROETHYLENE	890		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	150		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	990		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	6.6		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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T2-SZ SPECIMEN
T1-S2 TRENCH-2 8' Below Ground

SPECIMEN I.D. NUMBER

91812344 2 8

ACCESSION NO.

91 812344

REFERRING CLIENT

DATE COLLECTED

09/18/91

TIME COLLECTED

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CLIENT LAB NO.

2344

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10/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.

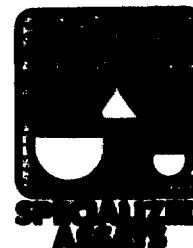
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T2-SZ SPECIMEN
T1-S2 TRENCH-2 8' Below Ground

SPECIMEN I.D. NUMBER
918123442 8 0319 91 812344

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DATE COLLECTED

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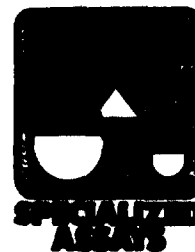
CLIENT LAB NO.
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REPORTED
10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

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T2-S2 SPECIMEN
T1-S2 TRENCH-2 8' Below Ground

SPECIMEN I.D. NUMBER

91812344 2 8

ACCESSION NO.

91 812344

0320

REFERRING CLIENT

DATE COLLECTED

09/18/91

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CLIENT LAB NO.

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10/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

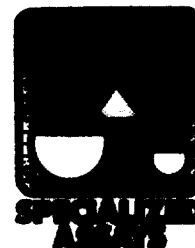
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12-S3 SPECIMEN
T1-S3 TRENCH 2 - 5' Below Ground

SPECIMEN I.D. NUMBER
91812345 2 8 0321
ACCESSION NO.
91 812345

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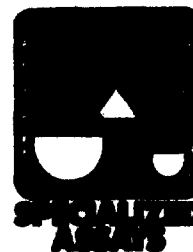
CLIENT LAB NO.
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10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	3.83		PPM
BARIUM	181		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	11.7		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	20.6		PPM
SILVER	<1.0		PPM
COPPER	8.40		PPM
NICKEL	19.3		PPM
ZINC	54.8		PPM
IRON	18908		PPM
MANGANESE	381		PPM
ALUMINUM	21346		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	1.44		PPM
CALCIUM	59154		PPM
COBALT	10.7		PPM
MAGNESIUM	7948		PPM
POTASSIUM	1683		PPM
SODIUM	143		PPM
THALLIUM	<1.0		PPM
VANADIUM	23.7		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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T2-S3 SPECIMEN
T1-S3 TRENCH 2 5' Below Ground

SPECIMEN I.D. NUMBER

91812345 2 8

ACCESSION NO.

91 812345

REFERRING CLIENT

JOE PUTNAM

DATE COLLECTED

09/18/91

TIME COLLECTED

00:00

CLIENT LAB NO.

00000

RECEIVED

09/19/91

REPORTED

10/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.

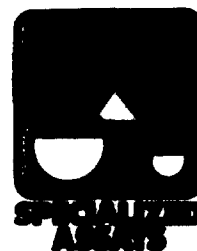
ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

T2-53 SPECIMEN
T1-S3 TRENCH 2 5' Below Ground

SPECIMEN I.D. NUMBER
918123452 8 0323 91 812345

REFERRING CLIENT

DATE COLLECTED
09/18/91

TIME COLLECTED
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TEST

RESULT

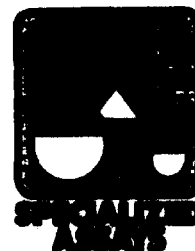
REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	0.074		PPM
1,2-DICHLOROETHYLENE	0.040		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	0.072		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	0.058		PPM
ACETONE	0.031		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.33		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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T2-S3 SPECIMEN
T1-S3 TRENCH 2 5' Below Ground

SPECIMEN I.D. NUMBER
918123452 8

ACCESSION NO.
0324 91 812345

REFERRING CLIENT

DATE COLLECTED
09/18/91

TIME COLLECTED
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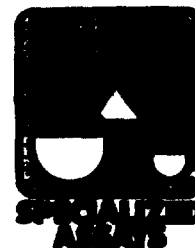
CLIENT LAB NO.
00000

REPORTED
10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

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T2-S3 SPECIMEN
T1-S3 TRENCH #2 - 5' Below Ground

SPECIMEN I.D. NUMBER
91812345 2 8' 0325

ACCESSION NO.
91 812345

REFERRING CLIENT

DATE COLLECTED
09/18/91

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CLIENT LAB NO.
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2345

TEST

RESULT

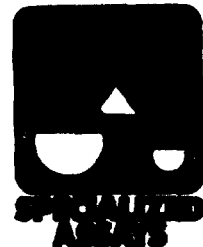
REFERENCE LIMITS

UNITS

PCB 1254	ND
PCB 1221	ND
PCB 1232	ND
PCB 1248	ND
PCB 1260	ND
PCB 1016	ND
TOXAPHENE	ND

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SPECIMEN
T1-S4 TRENCH 1 13' Below Ground

SPECIMEN I.D. NUMBER

91812343 2 8

ACCESSION NO.

91 812343

REFERRING CLIENT

JOE PUTNAM

DATE COLLECTED

09/17/91

TIME COLLECTED

00:00

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09/19/91

REPORTED
10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	6.19		PPM
BARIUM	226		PPM
CADMIUM	26.6		PPM
CHROMIUM, TOTAL	123		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	305		PPM
SILVER	1.87		PPM
COPPER	166		PPM
NICKEL	75.3		PPM
ZINC	737		PPM
IRON	15177		PPM
MANGANESE	378		PPM
ALUMINUM	13398		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	1.20		PPM
CALCIUM	70252		PPM
COBALT	12.7		PPM
MAGNESIUM	4454		PPM
POTASSIUM	1821		PPM
SODIUM	438		PPM
THALLIUM	<1.0		PPM
VANADIUM	21.7		PPM
CYANIDE	9.3		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	13		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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SPECIMEN
T1-S4 TRENCH 1 13' Below Ground

SPECIMEN I.D. NUMBER

91812343 2 8

ACCESSION NO.

91 812343

REFERRING CLIENT

DATE COLLECTED

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TEST

RESULT

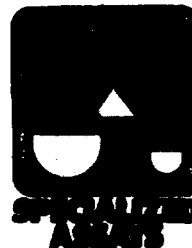
REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	98		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	1200		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	650		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	320		PPM
ACETONE	170		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	3.3		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	6.6		PPM
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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T1-S4 SPECIMEN
TRENCH 1 13' Below ground

SPECIMEN I.D. NUMBER

91812343 2 8

ACCESSION NO.

91 812343 0328

REFERRING CLIENT

DATE COLLECTED

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CLIENT LAB NO.

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09/19/91

REPORTED

10/01/91

JOE PUTNAM

2343

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	16.5
NITROBENZENE	ND

PPM

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T1-S4 SPECIMEN
TRENCH 1 13' Below Ground

SPECIMEN I.D. NUMBER
91812342 8

ACCESSION NO.
91 812343

REFERRING CLIENT

DATE COLLECTED
09/17/91

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CLIENT LAB NO.
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10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	9.9		PPM
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

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FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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SPECIMEN
T1-S4 TRENCH 1 15' Below Ground

SPECIMEN I.D. NUMBER
918123432 8

ACCESSION NO.
91 812343

REFERRING CLIENT

DATE COLLECTED
09/17/91

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09/19/91

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10/01/91

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TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

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ATT. JOE PUTNAM
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T1-S6 SPECIMEN
TRENCH 1 20' Below Ground

SPECIMEN I.D. NUMBER

91812342 2 8

0331

91 812342

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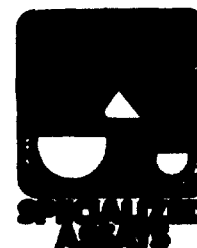
REPORTED

10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	3.29		PPM
BARIUM	185		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	20.4		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	29.4		PPM
SILVER	<1.0		PPM
COPPER	10.3		PPM
NICKEL	15.8		PPM
ZINC	51.2		PPM
IRON	14147		PPM
MANGANESE	1333		PPM
ALUMINUM	15898		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	1.22		PPM
CALCIUM	6161		PPM
COBALT	10.6		PPM
MAGNESIUM	1185		PPM
POTASSIUM	1805		PPM
SODIUM	706		PPM
THALLIUM	<1.0		PPM
VANADIUM	23.7		PPM
CYANIDE	2.3		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	1.3		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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SPECIMEN
T1-S6 TRENCH 1 20' Below Ground

SPECIMEN I.D. NUMBER

91812342 2 8

0332

91 812342

REFERRING CLIENT

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DATE COLLECTED

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TIME COLLECTED

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CLIENT LAB NO.

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RECEIVED
09/19/91

REPORTED
10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	1.5		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	4.0		PPM
TOLUENE	12		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	27		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	6.3		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.33		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	29		PPM
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	8.1		PPM
2,4,6-TRI CL PHENOL	ND		
ACENAPTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
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FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5788

T1-S6 SPECIMEN
TRENCH 1 20' Below Ground

SPECIMEN I.D. NUMBER

91812342

2 8

0333

ACCESSION NO.

91 812342

REFERRING CLIENT

E PUTNAM

DATE COLLECTED

09/17/91

TIME COLLECTED

00:00

CLIENT LAB NO.

2342

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RECEIVED

09/19/91

REPORTED

10/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
1,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT

FRANKLIN

SUITE 200

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN

SPECIMEN I.D. NUMBER

ACCESSION NO.

T1-S6 TRENCH 1 20' Below Ground

91812342 2 8

0334 91 812342

REFERRING CLIENT

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09/17/91

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CLIENT LAB NO.
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2342

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	0.92		PPM
4-METHYLPHENOL	14		PPM
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
LDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'ODT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		

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T1-S6 SPECIMEN
TRENCH 1 20' Below Ground

SPECIMEN I.D. NUMBER
91812342

ACCESSION NO.
91 812342

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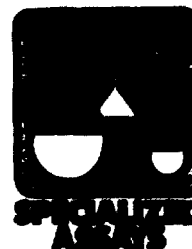
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10/01/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		

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T4-S1

SPECIMEN

SPECIMEN I.D. NUMBER

91812640 2 8

0336

ACCESSION NO. 91 812640

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TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	4.24	PPM
BARIUM	111	PPM
CADMIUM	4.16	PPM
CHROMIUM, TOTAL	2.98	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	52.3	PPM
SILVER	4.54	PPM
COPPER	26.8	PPM
NICKEL	14.7	PPM
ZINC	78.1	PPM
IRON	11056	PPM
MANGANESE	639	PPM
ALUMINUM	10306	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	102400	PPM
COBALT	<10.0	PPM
MAGNESIUM	5214	PPM
POTASSIUM	1238	PPM
SODIUM	301	PPM
THALLIUM	<1.0	PPM
VANADIUM	17.8	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	12	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CHLOROETHYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

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T4-S1

SPECIMEN

SPECIMEN I.D. NUMBER

91812640 2 8

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TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	68		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	640		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	260		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	17		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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SPECIMEN

SPECIMEN I.D. NUMBER

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0338

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TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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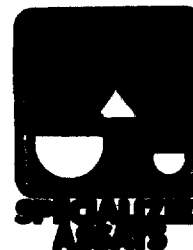
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SPECIMEN

SPECIMEN I.D. NUMBER

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2 8

0339

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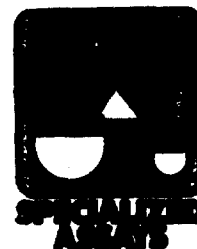
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TEST	RESULT	REFERENCE LIMITS	UNITS
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	1.7		PPM

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SPECIMEN

SPECIMEN I.D. NUMBER

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0340

91 812641

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2641

CLIENT LAB NO.

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TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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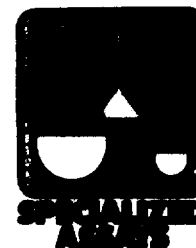
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SPECIMEN

SPECIMEN I.D. NUMBER

91812641

2 8

0341

ACCESSION NO.

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TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLOROPHENOL ND
3-NITROANILINE ND
METHOD NUMBER 8080
QUANTITATION LIMIT <0.5
ALDRIN ND
ALPHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242

8080

<0.5

PPM

1.9

PPM

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SPECIMEN

SPECIMEN I.D. NUMBER

91812641

2 8

0342

ACCESSION NO.

91 812641

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TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254

ND

PCB 1221

ND

PCB 1232

ND

PCB 1248

ND

PCB 1260

ND

PCB 1016

ND

TOXAPHENE

ND

PH

6.7

PH UNITS

IGNITABILITY TEST

SAMPLE HEATED TO 160F WITHOUT FLASH OR IGNITION.

CORROSIVITY TEST

SAMPLE NOT CORROSIVE

REACTIVITY TEST

REACTIVE CYANIDE

<2.0

PPM

REACTIVE SULFIDE

5.5

PPM

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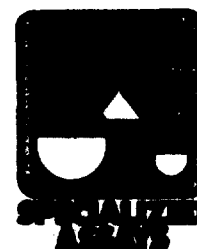
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SPECIMEN

SPECIMEN I.D. NUMBER

91812642

2 8

0343

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CLIENT LAB NO.

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10/04/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	5.38		PPM
BARIUM	159		PPM
CADMIUM	2.35		PPM
CHROMIUM, TOTAL	51.6		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	404		PPM
SILVER	4.42		PPM
COPPER	47.4		PPM
NICKEL	16.1		PPM
ZINC	177		PPM
IRON	10466		PPM
MANGANESE	362		PPM
ALUMINUM	9956		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	87360		PPM
COBALT	<10.0		PPM
MAGNESIUM	3692		PPM
POTASSIUM	889		PPM
SODIUM	222		PPM
THALLIUM	<1.0		PPM
VANADIUM	16.8		PPM
CYANIDE	8.1		PPM

CLP VOLATILES

METHOD NUMBER	8240		
QUANTITATION LIMIT	2.5		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	3.5		PPM
1,2-DICHLOROETHANE	ND		

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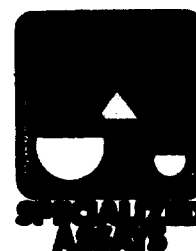
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SPECIMEN

SPECIMEN I.D. NUMBER

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TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	16		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	540		PPM
TOLUENE	150		PPM
1,2-DICHLOROETHYLENE	150		PPM
1,1,1-TRI-CL-ETHANE	21		PPM
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	88		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	95		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	17		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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TD-06

SPECIMEN

SPECIMEN I.D. NUMBER

91812642

2 8

0345

ACCESSION NO.

91 812642

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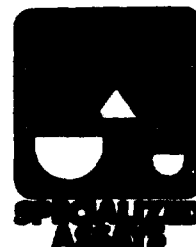
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10/04/91

TEST	RESULT	REFERENCE LIMITS	UNITS
ANTHRACENE	ND		
BENZEDINE	ND		
BENZO(A)ANTHRACENE	ND		
BENZO(A)PYRENE	ND		
BENZO(B)FLUORANTHENE	ND		
BENZO(GHI)PERYLENE	ND		
BENZO(K)FLUORANTHENE	ND		
BIS-2-CL-ETHOX METHA	ND		
BIS(2-CL-ETHYL)ETHER	ND		
BIS(2-CL-ISOPRO)ETHR	ND		
BIS(2-ETH-HEX)PHTHAL	56		PPM
4-BR-PHEN-PHEN-ETHER	ND		
BUTYL-BENZ-PHTHALATE	ND		
2-CHLORONAPHTHALENE	ND		
4-CL-PHEN-PHEN-ETHER	ND		
CHRYSENE	ND		
DIBENZ(A,H)ANTHRACEN	ND		
1,2-DICHLOROBENZENE	ND		
1,3-DICHLOROBENZENE	ND		
1,4-DICHLOROBENZENE	ND		
3,3'-DICL BENZIDINE	ND		
DIETHYL PHTHALATE	ND		
DIMETHYL PHTHALATE	170		PPM
BENZO(E)PYRENE	ND		
DI-N-BUTYL PHTHALATE	ND		
2,4-DINITROTOLUENE	ND		
2,6-DINITROTOLUENE	ND		
DI-N-OCTYL PHTHALATE	ND		
1,2-DIPHEN-HYDRAZINE	ND		
FLUORANTHENE	ND		
FLUORENE	ND		
HEXACHLOROBENZENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXCLCYCLOPENTADIENE	ND		
HEXACHLOROETHANE	ND		
INDENO(1,2,3-CD)PYR	ND		
ISOPHORONE	ND		
NAPHTHALENE	ND		
NITROBENZENE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

TD-06

SPECIMEN

SPECIMEN I.D. NUMBER

ACCESSION NO.

91812642

2 8

0346

91 812642

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

09/23/91

00:00

RECEIVED
09/23/91

JOE PUTNAM

2642

CLIENT LAB NO.

00000

REPORTED
10/04/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND
METHOD NUMBER 8080
QUANTITATION LIMIT <0.5
ALDRIN ND
ALPHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'ODT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242

8080

<0.5

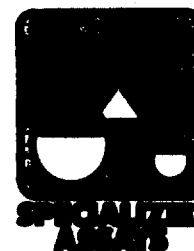
PPM

2.7

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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TD-06

SPECIMEN

SPECIMEN I.D. NUMBER

91812642

ACCESSION NO.

91 812642

2 8 0347

REFERRING CLIENT

DATE COLLECTED

09/23/91

TIME COLLECTED

00:00

RECEIVED
09/23/91

JOE PUTNAM

2642

CLIENT LAB NO.
00000REPORTED
10/04/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254

ND

PCB 1221

ND

PCB 1232

ND

PCB 1248

ND

PCB 1260

ND

PCB 1016

ND

TOXAPHENE

ND

PH

6.9

PH UNITS

IGNITABILITY TEST

SAMPLE HEATED TO 160F WITHOUT FLASH OR IGNITION.

CORROSIVITY TEST

SAMPLE NOT CORROSIVE

REACTIVITY TEST

REACTIVE CYANIDE

<2.0

PPM

REACTIVE SULFIDE

5.0

PPM

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

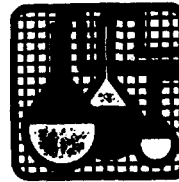
4437

210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIALIZED ASSAYS

2 8 0348

REFERRING CLIENT



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786

Form 3035B Rev. 2/87

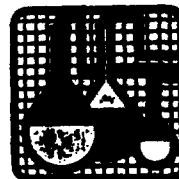
BILLING CONTROL NUMBER (FOR LAB USE ONLY)				PROJECT # 00077-TEL			P.O. # 10043-060		
SAMPLERS (Signature) <i>Joe F. 1-1-1</i>				PROJECT NAME SMALL SITE					
FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	POST	ANALYSES REQUESTED		
	TEL-01 (TRUCK-8')	9/19/91	11:30		X	1	TAL/TAC <i>add BOD</i>		
	T1-56 (70.0')	9/17/91	12:00		X	2	TAL/TAC		
	T1-24 (130')	9/17/91	13:00		X	2	TAL/TAC		
	T2-22 (8.0')	9/18/91	13:30		X	2	TAL/TAC		
	T2-53 (100')	9/18/91	13:30		X	2	TAL/TAC		
Relinquished by: (Signature) <i>Joe F. 1-1-1</i>	Date/Time 13 39	Received by: (Signature) <i>Stuart Schlz</i>	Received for Laboratory by: (Signature)			Date/Time			
Relinquished by: (Signature) <i>Stuart Schlz</i>	Date/Time 13 53	Received by: (Signature) <i>Stuart Schlz</i>	Remarks * 2 jars = 1 sample JEP 110 sign analysis sheet!						
Relinquished by: (Signature)	Date/Time	Received by: (Signature)							
Relinquished by: (Signature)	Date/Time	Received by: (Signature)							

SPECIALIZED ASSAYS

2 8 0349

REFERRING CLIENT

DRE Technologies, Inc.
316 Patterson
133 Hixley St. Suite 200
Franklin, TN 37064



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786

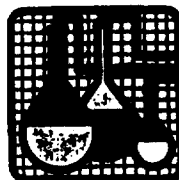
Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)			PROJECT #			P.O. #		
			00017-TEL			4000 0000		
SAMPLERS (Signature)			PROJECT NAME					
Patricia Thompson			AAA. LIFE					
FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT.	ANALYSES REQUESTED	
	T4-S1	1/27/11	1120		✓		TA-1/TAC	
	T4-S2	1/27/11	1130		✓		TAC/TAC	
	T4-S3	1/27/11	1140		✓		TAC/TAC	
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Received for Laboratory by: (Signature)		Date/Time
Patricia Thompson		1/27/11 1435		A. C. Stone				
Relinquished by: (Signature)		Date/Time		Received by: (Signature)		Remarks		
Relinquished by: (Signature)		Date/Time		Received by: (Signature)				
Relinquished by: (Signature)		Date/Time		Received by: (Signature)				
Relinquished by: (Signature)		Date/Time		Received by: (Signature)				

SPECIALIZED ASSAYS

REFERRING CLIENT

DRE



28 0350

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Nashville, TN 37202
1-615-255-5786

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)			PROJECT # 00037-DEL		P.O. # 4008-0100	
SAMPLERS (Signature) Patricia Thompson			PROJECT NAME SAND TRENCH H3			
FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	ANALYSES REQUESTED
	TD-03 (5/4 SPLD) Liquid Sludge	7/2/91	1100		✓	TAL/TAC/TCLYENH
	TD-04 (5/4 SPLD) Liquid Sludge	7/2/91	1100		✓	TAL/TAC/TCLYENH
	TS-10 SAND TRENCH H3	7/2/91	1511		✓	TAL/TAL
Relinquished by: (Signature) Patricia Thompson	Date/Time 7/2/91 1130	Received by: (Signature) [Signature]		Received for Laboratory by: (Signature)		Date/Time
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		Remarks		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)				

soil from SPECIMEN
B-1-5 (9.8 - 11.8')

SPECIMEN I.D. NUMBER

91813554 2 8 0351

ACCESSION NO.

91 813554

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

REPORTED

10/16/91

JOE PUTNAM

3554

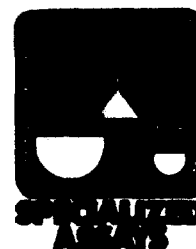
CLIENT LAB NO.

00000

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	4.60		PPM
BARIUM	150		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	10.5		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	49.6		PPM
SILVER	<1.0		PPM
COPPER	22.0		PPM
NICKEL	12.7		PPM
ZINC	48.1		PPM
IRON	14694		PPM
MANGANESE	1231		PPM
ALUMINUM	13386		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	15420		PPM
COBALT	10.1		PPM
MAGNESIUM	1094		PPM
POTASSIUM	1514		PPM
SODIUM	502		PPM
THALLIUM	<1.0		PPM
VANADIUM	21.8		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
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T4-S1

SPECIMEN

SPECIMEN I.D. NUMBER

ACCESSION NO.

91812640

91 812640

2 8

0352

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

09/23/91

00:00

RECEIVED
09/23/91

E PUTNAM

2640

CLIENT LAB NO.
00000

REPORTED
10/04/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
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TS-10

SPECIMEN

SPECIMEN I.D. NUMBER

91812639

ACCESSION NO.

91 812639

2 8

0353

REFERRING CLIENT

DATE COLLECTED

09/19/91

TIME COLLECTED

00:00

RECEIVED
09/20/91

JOE PUTNAM

2639

CLIENT LAB NO.
00000REPORTED
10/04/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	4.16		PPM
BARIUM	252		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	14.9		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	21.3		PPM
SILVER	<1.0		PPM
COPPER	10.9		PPM
NICKEL	17.6		PPM
ZINC	52.9		PPM
IRON	18866		PPM
MANGANESE	813		PPM
ALUMINUM	22500		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	1.28		PPM
CALCIUM	13474		PPM
COBALT	10.8		PPM
MAGNESIUM	1570		PPM
POTASSIUM	2520		PPM
SODIUM	256		PPM
THALLIUM	<1.0		PPM
VANADIUM	30.5		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.63		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CHLOROVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
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TS-10

SPECIMEN

SPECIMEN I.D. NUMBER

91812639 2 8

ACCESSION NO.

91 812639

0354

REFERRING CLIENT

DATE COLLECTED

09/19/91

TIME COLLECTED

00:00

RECEIVED
09/20/91

E PUTNAM

2639

CLIENT LAB NO.

00000

REPORTED
10/04/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	16		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	21		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	40		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	1.7		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	5.3		PPM
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT

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TS-10

SPECIMEN

SPECIMEN I.D. NUMBER

91812639 2 8

ACCESSION NO.

91 812639

REFERRING CLIENT

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09/20/91

JOE PUTNAM

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CLIENT LAB NO.

00000

REPORTED
10/04/91

TEST

RESULT

REFERENCE LIMITS

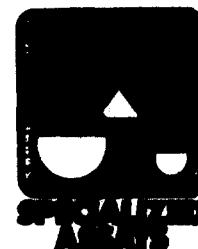
UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	3.0
NITROBENZENE	ND

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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TS-10

SPECIMEN

SPECIMEN I.D. NUMBER

91812639

2 8

0356

ACCESSION NO.

91 812639

REFERRING CLIENT

DATE COLLECTED

09/19/91

TIME COLLECTED

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RECEIVED
09/20/91

CLIENT LAB NO.

00000

REPORTED
10/04/91

JOE PUTNAM

2639

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	4.3		PPM
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	0.84		PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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TS-10

SPECIMEN

SPECIMEN I.D. NUMBER

91812639

2 8

0357

ACCESSION NO.

91 812639

REFERRING CLIENT

DATE COLLECTED

09/19/91

TIME COLLECTED

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RECEIVED
09/20/91

CLIENT LAB NO.

00000

REPORTED
10/04/91

JOE PUTNAM

2639

TEST

RESULT

REFERENCE LIMITS

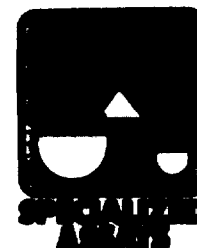
UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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SPECIMEN
TDL-01 TRENCH 3, DRUM #1 Liquid Product

SPECIMEN I.D. NUMBER
91812341 2 8

ACCESSION NO.
91 812341

REFERRING CLIENT

DATE COLLECTED
09/19/91

TIME COLLECTED
00:00

RECEIVED
09/19/91

CLIENT LAB NO.
00000

REPORTED
10/02/91

JOE PUTNAM

2341

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	<10	PPM
BARIUM	2298	PPM
CADMIUM	<10	PPM
CHROMIUM, TOTAL	45	PPM
SELENIUM	<10	PPM
MERCURY	<1.0	PPM
LEAD	608	PPM
SILVER	5.6	PPM
COPPER	43	PPM
NICKEL	148	PPM
ZINC	44	PPM
IRON	278	PPM
MANGANESE	29	PPM
ALUMINUM	2380	PPM
ANTIMONY	<10	PPM
BERYLLIUM	<10	PPM
CALCIUM	2738	PPM
COBALT	125	PPM
MAGNESIUM	167	PPM
POTASSIUM	1550	PPM
SODIUM	91	PPM
THALLIUM	NONE DETECTED.	

NO STANDARD IS AVAILABLE FOR A OIL MATRIX.

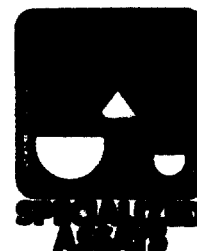
VANADIUM	<10	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	100	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CHLOROVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
TDL-01 TRENCH 3, DRUM 1 Liquid Product

SPECIMEN I.D. NUMBER
91812341 2 8

ACCESSION NO.
0359 91 812341

REFERRING CLIENT

DATE COLLECTED
09/19/91

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00:00

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09/19/91

JOE PUTNAM

2341

CLIENT LAB NO.
00000

REPORTED
10/02/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	220		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	860		PPM
TOLUENE	4400		PPM
1,2-DICHLOROETHYLENE	360		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	460		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	1160		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	225		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	500		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		

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SPECIMEN
TDL-01 TRENCH 5 Drum 1- Liquid Product

SPECIMEN I.D. NUMBER
91812341 2 8 0360 91 812341

REFERRING CLIENT

DATE COLLECTED

09/19/91

TIME COLLECTED

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TEST

RESULT

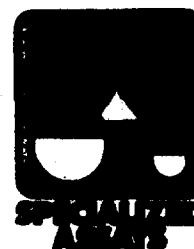
REFERENCE LIMITS

UNITS

ACENAPHTHYLENE	ND
ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND

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SPECIMEN
TDL-01 TRENCH 3 DRUM 1 PRODUCT Liquid

SPECIMEN I.D. NUMBER

91812341 2 8 0361

ACCESSION NO.
91 812341

REFERRING CLIENT

DATE COLLECTED

09/19/91

TIME COLLECTED

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CLIENT LAB NO.

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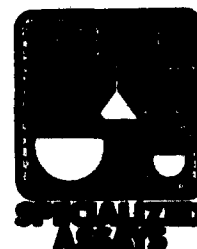
REPORTED

10/02/91

TEST	RESULT	REFERENCE LIMITS	UNITS
NITROBENZENE	ND		
N-NIT-DIMETHYLAMINE	ND		
N-NIT-DINPROPYLAMINE	ND		
N-NIT-DIPHENYLAMINE	ND		
PHENANTHRENE	ND		
PYRENE	ND		
1,2,4-TRICHLOROBENZ	ND		
ANILINE	ND		
BENZYL ALCOHOL	ND		
4-CHLOROANILINE	ND		
DIBENZOFURAN	ND		
2-METHYLNAPHTHALENE	ND		
2-NITROANILINE	ND		
4-NITROANILINE	ND		
BENZOIC ACID	ND		
2-METHYLPHENOL	ND		
4-METHYLPHENOL	ND		
2,4,5-TRICHLORPHENOL	ND		
3-NITROANILINE	ND		
METHOD NUMBER	8080		
QUANTITATION LIMIT	<0.5		PPM
ALDRIN	ND		
ALPHA BHC	ND		
BETA BHC	ND		
GAMMA BHC	ND		
DELTA BHC	ND		
CHLORDANE	ND		
4,4'DDT	ND		
4,4'DDE	ND		
4,4'DDD	ND		
DIELDRIN	ND		
ALPHA ENDOSULFAN	ND		
BETA ENDOSULFAN	ND		
ENDOSULFAN SULFATE	ND		
ENDRIN	ND		
ENDRIN ALDEHYDE	ND		
HEPTACHLOR	ND		
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		

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SPECIMEN
TDL-01 TRENCH 3 DEVM 1 Liquid Product

SPECIMEN I.D. NUMBER
91812341 2 8

ACCESSION NO.
0362 91 812341

REFERRING CLIENT

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TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1242

ND

PCB 1254

ND

PCB 1221

ND

PCB 1232

ND

PCB 1248

ND

PCB 1260

ND

PCB 1016

ND

TOXAPHENE

ND

IGNITABILITY TEST

SAMPLE HEATED TO 160F WITHOUT FLASH OR IGNITION.

REACTIVITY TEST

REACTIVE CYANIDE

<2.0

PPM

REACTIVE SULFIDE

<2.0

PPM

PH

6.1

PH UNITS

CORROSIVITY TEST

SAMPLE NOT CORROSIVE

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TD-03

SPECIMEN

SPECIMEN I.D. NUMBER

91812637 2 8

ACCESSION NO.

91 812637

REFERRING CLIENT

DATE COLLECTED

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TIME COLLECTED

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CLIENT LAB NO.

00000

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TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC

1.42

PPM

BARIUM

338

PPM

CADMIUM

<1.0

PPM

CHROMIUM, TOTAL

30.6

PPM

SELENIUM

<1.0

PPM

MERCURY

<0.10

PPM

LEAD

3142

PPM

SILVER

<1.0

PPM

COPPER

17.3

PPM

NICKEL

4.70

PPM

ZINC

80.2

PPM

IRON

3012

PPM

MANGANESE

50.8

PPM

ALUMINUM

2948

PPM

ANTIMONY

5.40

PPM

BERYLLIUM

<1.0

PPM

CALCIUM

6506

PPM

COBALT

<10.0

PPM

MAGNESIUM

326

PPM

POTASSIUM

142

PPM

SODIUM

518

PPM

THALLIUM

<1.0

PPM

VANADIUM

<10.0

PPM

CYANIDE

<2.0

PPM

CLP VOLATILES

METHOD NUMBER

8240

QUANTITATION LIMIT

2.5

PPM

BENZENE

ND

BROMOFORM

ND

CARBON TETRACHLORIDE

ND

CHLOROBENZENE

ND

CHLORODIBROMETHANE

ND

CHLOROETHANE

ND

2-CHLOROETHYL ETHER

ND

CHLOROFORM

ND

DI-CL-BR-METHANE

ND

1-1-DICHLOROETHANE

5.3

PPM

1,2-DICHLOROETHANE

ND

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SPECIMEN

SPECIMEN I.D. NUMBER

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TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	14		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	6.3		PPM
TOLUENE	140		PPM
1,2-DICHLOROETHYLENE	61		PPM
1,1,1-TRI-CL-ETHANE	32		PPM
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	5.8		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	14		PPM
XYLENE	82		PPM
ACETONE	4.2		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	500		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.

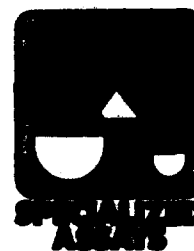
ATT. JOE PUTNAM

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TD-03 SPECIMEN SPECIMEN I.D. NUMBER 91812637 2 8 0365
 REFERRING CLIENT DATE COLLECTED 09/20/91 TIME COLLECTED 00:00
 E PUTNAM 2637 CLIENT LAB NO. 00000
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TEST	RESULT	REFERENCE LIMITS	UNITS
ANTHRACENE	ND		
BENZEDINE	ND		
BENZO(A)ANTHRACENE	ND		
BENZO(A)PYRENE	ND		
BENZO(B)FLUORANTHENE	ND		
BENZO(GH)PERYLENE	ND		
BENZO(K)FLUORANTHENE	ND		
BIS-2-CL-ETHOX METHA	ND		
BIS(2-CL-ETHYL)ETHER	ND		
BIS(2-CL-ISOPRO)ETHR	ND		
BIS(2-ETH-HEX)PHTHAL	ND		
4-BR-PHEN-PHEN-ETHER	ND		
BUTYL-BENZ-PHTHALATE	ND		
2-CHLORONAPHTHALENE	ND		
4-CL-PHEN-PHEN-ETHER	ND		
CHRYSENE	ND		
DIBENZ(A,H)ANTHRACEN	ND		
1,2-DICHLOROBENZENE	ND		
1,3-DICHLOROBENZENE	ND		
1,4-DICHLOROBENZENE	ND		
3,3'-DICL BENZIDINE	ND		
DIETHYL PHTHALATE	ND		
DIMETHYL PHTHALATE	ND		
BENZO(E)PYRENE	ND		
DI-N-BUTYL PHTHALATE	ND		
2,4-DINITROTOLUENE	ND		
2,6-DINITROTOLUENE	ND		
DI-N-OCTYL PHTHALATE	ND		
1,2-DIPHEN-HYDRAZINE	ND		
FLUORANTHENE	ND		
FLUORENE	ND		
HEXACHLOROBENZENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXCLCYCLOPENTADIENE	ND		
HEXACHLOROETHANE	ND		
INDENO(1,2,3-CD)PYR	ND		
ISOPHORONE	ND		
NAPHTHALENE	ND		
NITROBENZENE	ND		

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TD-03

SPECIMEN

SPECIMEN I.D. NUMBER

91812637

2 8

0366

ACCESSION NO.
91 812637

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TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	<0.5
ALDRIN	ND
ALPHA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'DOT	ND
4,4'DDE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	<1.0

PPM

PPM

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TD-03

SPECIMEN

SPECIMEN I.D. NUMBER

91812637

ACCESSION NO.

91 812637

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0367

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CLIENT LAB NO.

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TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

<1.0
<1.0
<1.0
<1.0
<1.0
<1.0
<1.0

PPM
PPM
PPM
PPM
PPM
PPM
PPM

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

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TD-04

SPECIMEN

SPECIMEN I.D. NUMBER

91812638 8

0368

ACCESSION NO.

91 812638

REFERRING CLIENT

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TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	2.06	PPM
BARIUM	350	PPM
CADMIUM	<1.0	PPM
CHROMIUM, TOTAL	29.6	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	1567	PPM
SILVER	<1.0	PPM
COPPER	9.88	PPM
NICKEL	5.50	PPM
ZINC	72.2	PPM
IRON	4956	PPM
MANGANESE	52.8	PPM
ALUMINUM	3364	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	6552	PPM
COBALT	<10.0	PPM
MAGNESIUM	269	PPM
POTASSIUM	124	PPM
SODIUM	826	PPM
THALLIUM	<1.0	PPM
VANADIUM	<10.0	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	12	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

DRE TECHNOLOGIES, INC.

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TD-04

SPECIMEN

SPECIMEN I.D. NUMBER

91812638 2 8

ACCESSION NO.

0369 91 812638

REFERRING CLIENT

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TEST

RESULT

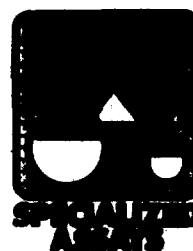
REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	110		PPM
TOLUENE	190		PPM
1,2-DICHLOROETHYLENE	140		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	45		PPM
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	500		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.
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TD-04

SPECIMEN

SPECIMEN I.D. NUMBER

91812638

2 8

0370

ACCESSION NO.

91 812638

REFERRING CLIENT

DATE COLLECTED

09/20/91

TIME COLLECTED

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CLIENT LAB NO.

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REPORTED

10/04/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICI BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT

FRANKLIN

SUITE 200

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
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TD-04

SPECIMEN

SPECIMEN I.D. NUMBER

91812638

ACCESSION NO.

91 812638

REFERRING CLIENT

DATE COLLECTED

09/20/91

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TIME COLLECTED

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2638

TEST

RESULT

REFERENCE LIMITS

UNITS

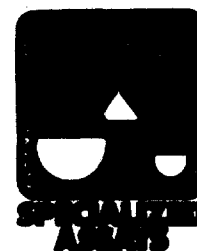
N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	<0.5
ALDRIN	ND
ALPHA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'ODT	ND
4,4'ODE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	<1.0

PPM

PPM

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SPECIMEN

SPECIMEN I.D. NUMBER

91812638 2 8

ACCESSION NO.

91 812638

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REFERRING CLIENT

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CLIENT LAB NO.

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10/04/91

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	<1.0		PPM
PCB 1221	<1.0		PPM
PCB 1232	<1.0		PPM
PCB 1248	<1.0		PPM
PCB 1260	<1.0		PPM
PCB 1016	<1.0		PPM
TOXAPHENE	<1.0		PPM

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SPECIMEN

SPECIMEN I.D. NUMBER

91812641

2 8

0373

ACCESSION NO.

91 812641

REFERRING CLIENT

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09/23/91

CLIENT LAB NO.

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2641

TEST

RESULT

REFERENCE LIMITS

UNITS

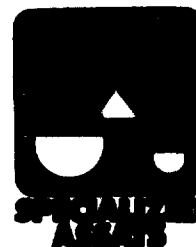
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	190		PPM
TOLUENE	63		PPM
1,2-DICHLOROETHYLENE	45		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	17		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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SPECIMEN

SPECIMEN I.D. NUMBER

91812641

2 8

0374

ACCESSION NO.

91 812641

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CLIENT LAB NO.

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10/04/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	4.52		PPM
BARIUM	165		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	22.3		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	311		PPM
SILVER	3.90		PPM
COPPER	38.6		PPM
NICKEL	16.2		PPM
ZINC	155		PPM
IRON	15452		PPM
MANGANESE	769		PPM
ALUMINUM	10414		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	62240		PPM
COBALT	<10.0		PPM
MAGNESIUM	4300		PPM
POTASSIUM	1029		PPM
SODIUM	213		PPM
THALLIUM	<1.0		PPM
VANADIUM	17.9		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	12		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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soil from SPECIMEN
B-1-9 (18.0 - 20.0')

SPECIMEN I.D. NUMBER

91813555 2 8

ACCESSION NO.

91 813555

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

CLIENT LAB NO.

00000

REPORTED

10/16/91

JOE PUTNAM

3555

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	0.5
ALDRIN	ND
ALPHA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'DDT	ND
4,4'DDE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND

PPM

DRE TECHNOLOGIES, INC.

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B-1-9^{Soil from} SPECIMEN
(18.0 - 20.0')

SPECIMEN I.D. NUMBER
91813555 2 8

ACCESSION NO.
0376 91 813555

REFERRING CLIENT

DATE COLLECTED
10/02/91

TIME COLLECTED
00:00

RECEIVED
10/04/91

JOE PUTNAM

3555

CLIENT LAB NO.
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REPORTED
10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

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B-2-4 ^{split} SPECIMEN
(15.5 - 17.5')

SPECIMEN I.D. NUMBER

91813556 2 8

ACCESSION NO.

91 813556

REFERRING CLIENT

DE PUTNAM

DATE COLLECTED

10/03/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

CLIENT LAB NO.

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REPORTED

10/16/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	1.42		PPM
BARIUM	150		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	10.0		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	16.7		PPM
SILVER	<1.0		PPM
COPPER	7.06		PPM
NICKEL	9.88		PPM
ZINC	42.2		PPM
IRON	10614		PPM
MANGANESE	323		PPM
ALUMINUM	13180		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	13668		PPM
COBALT	<10.0		PPM
MAGNESIUM	1339		PPM
POTASSIUM	725		PPM
SODIUM	419		PPM
THALLIUM	<1.0		PPM
VANADIUM	17.4		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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SPECIMEN
B-2-4 (15.5 - 17.5')

SPECIMEN I.D. NUMBER
91813556 2 8 0378

ACCESSION NO.
91 813556

REFERRING CLIENT

DATE COLLECTED
10/03/91

TIME COLLECTED
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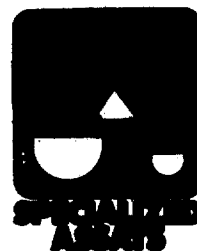
CLIENT LAB NO.
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REPORTED
10/16/91

TEST	RESULT	REFERENCE LIMITS	UNITS
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	ND		
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		
ACETONE	0.082		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	0.070		PPM
VINYL ACETATE	ND		
2-HEXANONE	0.032		PPM
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.33		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

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B-2-4 ^{soil from} SPECIMEN
(15.5 - 17.5')

SPECIMEN I.D. NUMBER

91813556

ACCESSION NO.

91 813556

2 8 0379

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TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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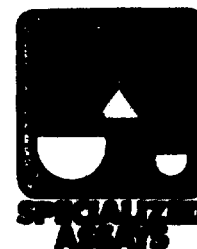
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8-2-4 (15.5 - 17.5')

SPECIMEN

SPECIMEN I.D. NUMBER

ACCESSION NO.

91813556

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10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND
METHOD NUMBER 8080
QUANTITATION LIMIT 0.5
DRIN ND
PHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242 ND

PPM

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

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SPECIMEN
B-2-4 (15.5 - 17.5')

SPECIMEN I.D. NUMBER

91813556 2 8 0381

ACCESSION NO.

91 813556

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RESULT

REFERENCE LIMITS

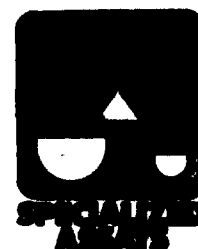
UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

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B-2-6 ^{cell 4000} SPECIMEN
(19.5 - 21.5')

SPECIMEN I.D. NUMBER
91813557

ACCESSION NO.
91 813557

REFERRING CLIENT

DATE COLLECTED
10/03/91

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10/16/91

TEST	RESULT	REFERENCE LIMITS	UNITS
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CLP TOTAL METALS

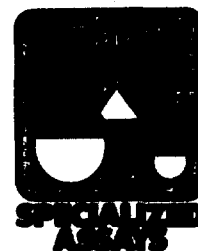
ARSENIC	1.42		PPM
BARIUM	151		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	8.70		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	16.7		PPM
SILVER	<1.0		PPM
COPPER	7.14		PPM
NICKEL	10.9		PPM
ZINC	42.2		PPM
IRON	8614		PPM
MANGANESE	449		PPM
ALUMINUM	15446		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	43780		PPM
COBALT	<10.0		PPM
MAGNESIUM	1150		PPM
POTASSIUM	2152		PPM
ODIUM	674		PPM
HALLIUM	<1.0		PPM
VANADIUM	14.3		PPM
CYANIDE	<2.0		PPM

CLP VOLATILES

METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

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8-2-6 ^{Soil from} SPECIMEN
(19.5 - 21.5')

SPECIMEN I.D. NUMBER
91813557 2 8

ACCESSION NO.
038391 813557

REFERRING CLIENT

DATE COLLECTED

10/03/91

TIME COLLECTED

00:00

RECEIVED
10/04/91

CLIENT LAB NO.
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10/16/91

PUTNAM

3557

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	ND		
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		
ACETONE	0.070		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	0.23		PPM
VINYL ACETATE	ND		
HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.33		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

B-2-6 (19.5 - 21.5')

SPECIMEN I.D. NUMBER

91813557

2 8

0384

ACCESSION NO.

91 813557

REFERRING CLIENT

DATE COLLECTED

10/03/91

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3557

CLIENT LAB NO.

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REPORTED

10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
METHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203

Phone 1-615-255-5788

B-2-6 (19.5 - 21.5')

SPECIMEN I.D. NUMBER

91813557

2 8

0385

ACCESSION NO.

91 813557

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10/16/91

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3557

CLIENT LAB NO.

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TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND
METHOD NUMBER 8080
QUANTITATION LIMIT 0.5
ALDRIN ND
PHA BHC ND
TA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242 ND

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

B-2-6 ^{Soil from} SPECIMEN
(19.5 - 21.5')

SPECIMEN I.D. NUMBER

91813557 2 8

ACCESSION NO.

91 813557

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CLIENT LAB NO.

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REPORTED

10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

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133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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B-3-4^{soil from} SPECIMEN
(13.3 - 15.3')

SPECIMEN I.D. NUMBER

91813558 2 8

ACCESSION NO.

0387 91 813558

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TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	1.78	PPM
BARIUM	182	PPM
CADMIUM	<1.0	PPM
CHROMIUM, TOTAL	8.90	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	16.2	PPM
SILVER	<1.0	PPM
COPPER	7.60	PPM
NICKEL	11.1	PPM
ZINC	33.0	PPM
IRON	11776	PPM
MANGANESE	1443	PPM
ALUMINUM	11612	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	2616	PPM
COBALT	<10.0	PPM
MAGNESIUM	830	PPM
POTASSIUM	973	PPM
DIUM	371	PPM
THALLIUM	<1.0	PPM
VANADIUM	13.7	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.010	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

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FRANKLIN TN 37064

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Phone 1-615-255-5786

B-3-4 ^{Soil from} SPECIMEN
(13.3 - 15.3')

SPECIMEN I.D. NUMBER

91813558 2 8

ACCESSION NO.

0388 91 813558

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RESULT

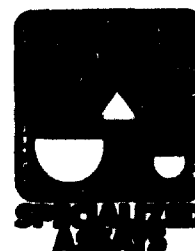
REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	0.020		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	0.098		PPM
1,2-DICHLOROETHYLENE	0.022		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	0.026		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	0.034		PPM
ACETONE	0.18		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	0.34		PPM
NYL ACETATE	ND		
HEXANONE	ND		
4-METHYL-2-PENTANONE	0.11		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	3.3		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.
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B-3-4 ^{Soil from} SPECIMEN
(13.3 - 15.3')

SPECIMEN I.D. NUMBER

91813558 2 8

ACCESSION NO.

038991 813558

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CLIENT LAB NO.

3558

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10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
METHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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B-3-4 ^{soil from} SPECIMEN
(13.3 - 15.3')

SPECIMEN I.D. NUMBER

91813558 2 8

ACCESSION NO.

0390 91 813558

REFERRING CLIENT

PUTNAM

DATE COLLECTED

10/04/91

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TEST

RESULT

REFERENCE LIMITS

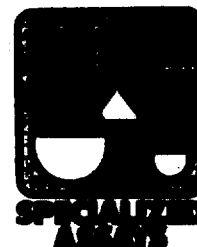
UNITS

N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	0.5
ALDRIN	ND
PHA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'DDT	ND
4,4'DDE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

B-3-4 ^{Soil from} SPECIMEN
(13.3 - 15.3')

SPECIMEN I.D. NUMBER

91813558 2 8

ACCESSION NO.

91 813558

0391

REFERRING CLIENT

DATE COLLECTED

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CLIENT LAB NO.

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10/16/91

PUTNAM

3558

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254

ND

PCB 1221

ND

PCB 1232

ND

PCB 1248

ND

PCB 1260

ND

PCB 1016

ND

TOXAPHENE

ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

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TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

B-3-7 (17.5 - 19.5')

SPECIMEN I.D. NUMBER
91813559

RECESSION NO.
91 813559

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DATE COLLECTED
10/04/91

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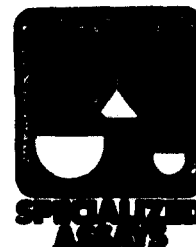
CLIENT LAB NO.
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REPORTED
10/16/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	2.28		PPM
BARIUM	211		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	10.1		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	18.1		PPM
SILVER	<1.0		PPM
COPPER	7.94		PPM
NICKEL	12.7		PPM
ZINC	71.1		PPM
IRON	16152		PPM
MANGANESE	1196		PPM
ALUMINUM	14064		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	6972		PPM
COBALT	<10.0		PPM
MAGNESIUM	1103		PPM
POTASSIUM	949		PPM
DIUM	384		PPM
THALLIUM	<1.0		PPM
VANADIUM	17.1		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

B-3-7^{alt} SPECIMEN
(17.5 - 19.5')

SPECIMEN I.D. NUMBER

91813559

2 8

0393

ACCESSION NO.

91 813559

REFERRING CLIENT

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3559

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	0.084		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	0.40		PPM
1,2-DICHLOROETHYLENE	0.12		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	0.13		PPM
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	0.070		PPM
ACETONE	0.18		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	0.25		PPM
VINYL ACETATE	ND		
HEXANONE	ND		
4-METHYL-2-PENTANONE	0.084		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	1.6		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

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SPECIMEN
B-3-7 (17.5 - 19.5')

SPECIMEN I.D. NUMBER

91813559 2 8

ACCESSION NO.

0394 91 813559

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CLIENT LAB NO.

3559

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REPORTED

10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICI BENZIDINE	ND
ETHYL PHTHALATE	ND
METHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

8-3-7 (17.5 - 19.5')

SPECIMEN

SPECIMEN I.D. NUMBER
91813559 2 8

0395 ACCESSION NO.
91 813559

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RESULT

REFERENCE LIMITS

UNITS

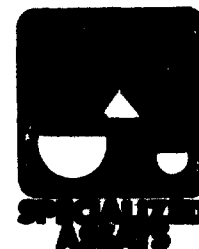
N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND
METHOD NUMBER 8080
QUANTITATION LIMIT 0.5
ALDRIN ND
PHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242 ND

8080
0.5

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

B-3-7 ^{Soil from} SPECIMEN
(17.5 - 19.5')

SPECIMEN I.D. NUMBER
91813559

ASSOCIATION NO.
91 813559

REFERRING CLIENT

DATE COLLECTED
10/04/91

2 8 0396
TIME COLLECTED
00:00

RECEIVED
10/04/91

PUTNAM

3559

CLIENT LAB NO.
00000

REPORTED
10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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SPECIMEN

B-4-4 soil from (138-158')

SPECIMEN I.D. NUMBER

91813735

ACCESSION NO.

91 813735

REFERRING CLIENT

PUTNAM

DATE COLLECTED

10/07/91

TIME COLLECTED

00:00

RECEIVED

10/07/91

CLIENT LAB NO.

00000

REPORTED

10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	3.30	PPM
BARIUM	195	PPM
CADMIUM	<1.0	PPM
CHROMIUM, TOTAL	15.6	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	23.4	PPM
SILVER	<1.0	PPM
COPPER	10.4	PPM
NICKEL	16.0	PPM
ZINC	39.4	PPM
IRON	20960	PPM
MANGANESE	1779	PPM
ALUMINUM	18920	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	1.40	PPM
CALCIUM	27400	PPM
COBALT	13.1	PPM
MAGNESIUM	1401	PPM
POTASSIUM	1535	PPM
DIUM	503	PPM
THALLIUM	<1.0	PPM
VANADIUM	22.7	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

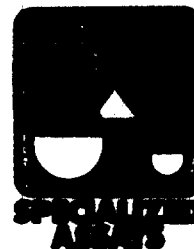
METHOD NUMBER	8240	
QUANTITATION LIMIT	0.050	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

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FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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SPECIMEN
B-1-5 (9.8 - 11.8')

SPECIMEN I.D. NUMBER
91813554 2 8

ACCESSION NO.
91 813554

REFERRING CLIENT

DATE COLLECTED
10/02/91

TIME COLLECTED
00:00

PUTNAM

3554

CLIENT LAB NO.
00000

RECEIVED
10/04/91

REPORTED
10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE ND
1,2-DICHLOROPROPANE ND
1,3-DICHLOROPROPENE ND
ETHYLBENZENE ND
METHYL BROMIDE ND
METHYL CHLORIDE ND
METHYLENE CHLORIDE ND
1,1,2,2 TET CL ETHAN ND
TETRACHLOROETHYLENE ND
TOLUENE

0.11

PPM

1,2-DICHLOROETHYLENE ND
1,1,1-TRI-CL-ETHANE ND
1,1,2-TRI-CL-ETHANE ND
TRICHLOROETHYLENE ND
TRI-CL-F-METHANE ND
VINYL CHLORIDE ND
XYLENE ND
ACETONE ND

CARBON DISULFIDE ND
2-BUTANONE (MEK) 0.28

PPM

VINYL ACETATE ND
HEXANONE 0.18

PPM

4-METHYL-2-PENTANONE 0.052

PPM

STYRENE ND

CLP EXTRACTABLES

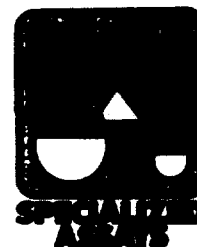
METHOD NUMBER 8270
QUANTITATION LIMIT 1.6

PPM

2-CHLOROPHENOL ND
2,4-DICHLOROPHENOL ND
2,4-DIMETHYLPHENOL ND
2,4-DINITROPHENOL ND
2-NITROPHENOL ND
4-NITROPHENOL ND
P-CHLORO-M-CRESOL ND
PENTACHLOROPHENOL ND
PHENOL ND
2,4,6-TRI CL PHENOL ND
ACENAPHTHENE ND
ACENAPHTHYLENE ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

Soil from SPECIMEN
B-1-5 (9.8 - 11.8')

SPECIMEN I.D. NUMBER

91813554

ACCESSION NO.

91 813554

2 8

0399

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

CLIENT LAB NO.

00000

REPORTED

10/16/91

PUTNAM

3554

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND		
BENZEDINE	ND		
BENZO(A)ANTHRACENE	ND		
BENZO(A)PYRENE	1.9		PPM
BENZO(B)FLUORANTHENE	ND		
BENZO(GHI)PERYLENE	ND		
BENZO(K)FLUORANTHENE	3.9		PPM
BIS-2-CL-ETHOX METHA	ND		
BIS(2-CL-ETHYL)ETHER	ND		
BIS(2-CL-ISOPRO)ETHR	ND		
BIS(2-ETH-HEX)PHTHAL	ND		
4-BR-PHEN-PHEN-ETHER	ND		
BUTYL-BENZ-PHTHALATE	ND		
2-CHLORONAPHTHALENE	ND		
4-CL-PHEN-PHEN-ETHER	ND		
CHRYSENE	2.3		PPM
DIBENZ(A,H)ANTHRACEN	ND		
1,2-DICHLOROBENZENE	ND		
1,3-DICHLOROBENZENE	ND		
1,4-DICHLOROBENZENE	ND		
2,3'-DICL BENZIDINE	ND		
ETHYL PHTHALATE	ND		
DIMETHYL PHTHALATE	ND		
BENZO(E)PYRENE	ND		
DI-N-BUTYL PHTHALATE	ND		
2,4-DINITROTOLUENE	ND		
2,6-DINITROTOLUENE	ND		
DI-N-OCTYL PHTHALATE	ND		
1,2-DIPHEN-HYDRAZINE	ND		
FLUORANTHENE	6.2		PPM
FLUORENE	ND		
HEXACHLOROBENZENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXCLCYCLOPENTADIENE	ND		
HEXACHLOROETHANE	ND		
INDENO(1,2,3-CD)PYR	ND		
ISOPHORONE	ND		
NAPHTHALENE	ND		
NITROBENZENE	ND		

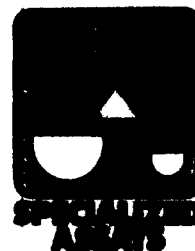
DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

8-1-5 (9.8 - 11.8')

SPECIMEN

SPECIMEN I.D. NUMBER

91813554 2 8

ACCESSION NO.

91 813554

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

REPORTED

10/16/91

PUTNAM

3554

CLIENT LAB NO.

00000

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND

PHENANTHRENE 5.2
PYRENE 7.8

PPM
PPM

1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND

METHOD NUMBER 8080
QUANTITATION LIMIT 0.5

PPM

ALDRIN ND
PHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND
HEPTACHLOR ND
HEPTACHLOREPOXIDE ND
METHOXYCHLOR ND
PCB 1242 ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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soil (new) SPECIMEN
B-1-5 (9.8 - 11.8')

SPECIMEN I.D. NUMBER

91813554 2 8

ACCESSION NO.

91 813554

0401

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

PUTNAM

3554

CLIENT LAB NO.

00000

REPORTED

10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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soil from SPECIMEN
B-1-9 (18.0 - 20.0')

SPECIMEN I.D. NUMBER
91813555 2 8

ACCESSION NO.
0402 91 813555

REFERRING CLIENT

DATE COLLECTED
10/02/91

TIME COLLECTED
00:00

RECEIVED
10/04/91

PUTNAM

3555

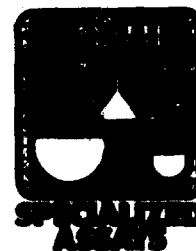
CLIENT LAB NO.
00000

REPORTED
10/16/91

TEST	RESULT	REFERENCE LIMITS	UNITS
ANTHRACENE	ND		
BENZEDINE	ND		
BENZO(A)ANTHRACENE	ND		
BENZO(A)PYRENE	ND		
BENZO(B)FLUORANTHENE	ND		
BENZO(GHI)PERYLENE	ND		
BENZO(K)FLUORANTHENE	ND		
BIS-2-CL-ETHOX METHA	ND		
BIS(2-CL-ETHYL)ETHER	ND		
BIS(2-CL-ISOPRO)ETHR	ND		
BIS(2-ETH-HEX)PTHAL	ND		
4-BR-PHEN-PHEN-ETHER	ND		
BUTYL-BENZ-PTHALATE	ND		
2-CHLORONAPHTHALENE	ND		
4-CL-PHEN-PHEN-ETHER	ND		
CHRYSENE	ND		
DIBENZ(A,H)ANTHRACEN	ND		
1,2-DICHLOROBENZENE	ND		
1,3-DICHLOROBENZENE	ND		
1,4-DICHLOROBENZENE	ND		
2,3'-DICL BENZIDINE	ND		
ETHYL PHTHALATE	ND		
DIMETHYL PHTHALATE	ND		
BENZO(E)PYRENE	ND		
DI-N-BUTYL PHTHALATE	ND		
2,4-DINITROTOLUENE	ND		
2,6-DINITROTOLUENE	ND		
DI-N-OCTYL PHTHALATE	ND		
1,2-DIPHEN-HYDRAZINE	ND		
FLUORANTHENE	ND		
FLUORENE	ND		
HEXACHLOROBENZENE	ND		
HEXACHLOROBUTADIENE	ND		
HEXCLCYCLOPENTADIENE	ND		
HEXACHLOROETHANE	ND		
INDENO(1,2,3-CD)PYR	ND		
ISOPHORONE	ND		
NAPHTHALENE	ND		
NITROBENZENE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

644000 SPECIMEN
B-1-9 (18.0 - 20.0')

SPECIMEN I.D. NUMBER

91813555 2 8

ACCESSION NO.

040391 813555

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

REPORTED

10/16/91

PUTNAM

3555

CLIENT LAB NO.

00000

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE ND

1,2-DICHLOROPROPANE ND

1,3-DICHLOROPROPENE ND

ETHYLBENZENE 1.5

PPM

METHYL BROMIDE ND

METHYL CHLORIDE ND

METHYLENE CHLORIDE ND

1,1,2,2 TET CL ETHAN ND

TETRACHLOROETHYLENE ND

TOLUENE 26

PPM

1,2-DICHLOROETHYLENE ND

1,1,1-TRI-CL-ETHANE ND

1,1,2-TRI-CL-ETHANE ND

TRICHLOROETHYLENE ND

TRI-CL-F-METHANE ND

VINYL CHLORIDE ND

XYLENE 6.1

PPM

ACETONE ND

CARBON DISULFIDE ND

2-BUTANONE (MEK) ND

NYL ACETATE ND

HEXANONE ND

4-METHYL-2-PENTANONE ND

STYRENE ND

CLP EXTRACTABLES

METHOD NUMBER 8270

QUANTITATION LIMIT 0.33 PPM

2-CHLOROPHENOL ND

2,4-DICHLOROPHENOL ND

2,4-DIMETHYLPHENOL ND

2,4-DINITROPHENOL ND

2-NITROPHENOL ND

4-NITROPHENOL ND

P-CHLORO-M-CRESOL ND

PENTACHLOROPHENOL ND

PHENOL ND

2,4,6-TRI CL PHENOL ND

ACENAPHTHENE ND

ACENAPHTHYLENE ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

soil from SPECIMEN
B-1-9 (18.0 - 20.0')

SPECIMEN I.D. NUMBER

91813555 2 8

ACCESSION NO.

91 813555

0404

REFERRING CLIENT

DATE COLLECTED

10/02/91

TIME COLLECTED

00:00

RECEIVED

10/04/91

PUTNAM

3555

CLIENT LAB NO.

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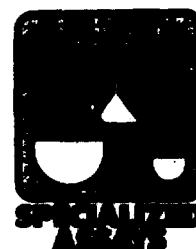
REPORTED

10/16/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP TOTAL METALS			
ARSENIC	3.12		PPM
BARIUM	163		PPM
CADMIUM	<1.0		PPM
CHROMIUM, TOTAL	10.3		PPM
SELENIUM	<1.0		PPM
MERCURY	<0.10		PPM
LEAD	16.3		PPM
SILVER	<1.0		PPM
COPPER	7.72		PPM
NICKEL	10.9		PPM
ZINC	45.2		PPM
IRON	14892		PPM
MANGANESE	665		PPM
ALUMINUM	13990		PPM
ANTIMONY	<1.0		PPM
BERYLLIUM	<1.0		PPM
CALCIUM	17420		PPM
COBALT	<10.0		PPM
MAGNESIUM	1333		PPM
POTASSIUM	933		PPM
SODIUM	493		PPM
THALLIUM	<1.0		PPM
VANADIUM	20.8		PPM
CYANIDE	<2.0		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.62		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
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SPECIMEN
B-4-4 Soil from (17.8'-15.8')

SPECIMEN I.D. NUMBER
91813735

ACCESSION NO.
91 813735

REFERRING CLIENT

DATE COLLECTED
10/07/91

TIME COLLECTED
00:00

RECEIVED
10/07/91

PUTNAM

3735

CLIENT LAB NO.
00000

REPORTED
10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE ND
1,2-DICHLOROPROPANE ND
1,3-DICHLOROPROPENE ND
ETHYLBENZENE ND
METHYL BROMIDE ND
METHYL CHLORIDE ND
METHYLENE CHLORIDE ND
1,1,2,2 TET CL ETHAN ND
TETRACHLOROETHYLENE ND
TOLUENE ND
1,2-DICHLOROETHYLENE ND
1,1,1-TRI-CL-ETHANE ND
1,1,2-TRI-CL-ETHANE ND
TRICHLOROETHYLENE ND
TRI-CL-F-METHANE ND
VINYL CHLORIDE ND
XYLENE ND
ACETONE ND
CARBON DISULFIDE ND
2-BUTANONE (MEK) ND
VINYL ACETATE ND
HEXANONE ND
4-METHYL-2-PENTANONE ND
STYRENE ND
CLP EXTRACTABLES
METHOD NUMBER 8270
QUANTITATION LIMIT 0.33
2-CHLOROPHENOL ND
2,4-DICHLOROPHENOL ND
2,4-DIMETHYLPHENOL ND
2,4-DINITROPHENOL ND
2-NITROPHENOL ND
4-NITROPHENOL ND
P-CHLORO-M-CRESOL ND
PENTACHLOROPHENOL ND
PHENOL ND
2,4,6-TRI CL PHENOL ND
ACENAPHTHENE ND
ACENAPHTHYLENE ND

2.1

PPM

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
B-4-4 soil from (12.5'-15.8')

SPECIMEN I.D. NUMBER

91813735

2 8

0406

ACCESSION NO.

91 813735

REFERRING CLIENT

PUTNAM

DATE COLLECTED

10/07/91

TIME COLLECTED

00:00

RECEIVED

10/07/91

CLIENT LAB NO.

3735

00000

REPORTED

10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
METHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
B-4-4 soil from (13.8'-15.8')

SPECIMEN I.D. NUMBER
91813735

ACCESSION NO.
91 813735

REFERRING CLIENT

DATE COLLECTED
10/07/91

TIME COLLECTED
00:00

RECEIVED
10/07/91

PUTNAM

3735

CLIENT LAB NO.
00000

REPORTED
10/16/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	0.5
DRIN	ND
PHA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'DDT	ND
4,4'DDE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
B-4-4 soil from (0.8' x 0.8')

SPECIMEN I.D. NUMBER
91813735

ACCESSION NO.
91 813735

REFERRING CLIENT

DATE COLLECTED
10/07/91

2 8 0.408
TIME COLLECTED
00:00

RECEIVED
10/07/91

PUTNAM

3735

CLIENT LAB NO.
00000

REPORTED
10/16/91

TEST

RESULT

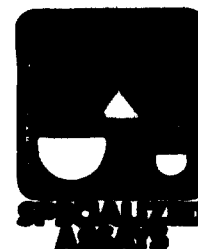
REFERENCE LIMITS

UNITS

PCB 1254	NO
PCB 1221	NO
PCB 1232	NO
PCB 1248	NO
PCB 1260	NO
PCB 1016	NO
TOXAPHENE	NO

DRE TECHNOLOGIES, INC.
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210 12th Ave., So. - Nashville, TN 37203
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SPECIMEN
BH-05-11.2-16.2'

SPECIMEN I.D. NUMBER
91814157

ACCESSION NO.
91 814157

2 8 0409

REFERRING CLIENT

DATE COLLECTED
10/10/91

TIME COLLECTED
00:00

RECEIVED
10/11/91

PUTNAM

4157

CLIENT LAB NO.
00000

REPORTED
10/24/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	4.76	PPM
BARIUM	246	PPM
CADMIUM	<1.0	PPM
CHROMIUM, TOTAL	10.2	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	20.8	PPM
SILVER	3.12	PPM
COPPER	17.4	PPM
NICKEL	21.6	PPM
ZINC	60.4	PPM
IRON	27880	PPM
MANGANESE	1738	PPM
ALUMINUM	27100	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	2.02	PPM
CALCIUM	85600	PPM
COBALT	11.7	PPM
MAGNESIUM	1966	PPM
POTASSIUM	3174	PPM
DIUM	692	PPM
THALLIUM	<1.0	PPM
VANADIUM	36.5	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.010	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

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SPECIMEN
BH-05 11.2-16.2'

SPECIMEN I.D. NUMBER
91814157

ACCESSION NO.
91 814157

2 8 0410

REFERRING CLIENT

DATE COLLECTED
10/10/91

TIME COLLECTED
00:00

RECEIVED
10/11/91

PUTNAM

4157

CLIENT LAB NO.
00000

REPORTED
10/24/91

TEST

RESULT

REFERENCE LIMITS

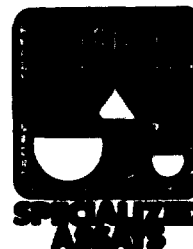
UNITS

1,1-DI-CL-ETHYLENE	ND
1,2-DICHLOROPROPANE	ND
1,3-DICHLOROPROPENE	ND
ETHYLBENZENE	ND
METHYL BROMIDE	NO
METHYL CHLORIDE	ND
METHYLENE CHLORIDE	ND
1,1,2,2 TET CL ETHAN	ND
TETRACHLOROETHYLENE	ND
TOLUENE	ND
1,2-DICHLOROETHYLENE	ND
1,1,1-TRI-CL-ETHANE	ND
1,1,2-TRI-CL-ETHANE	ND
TRICHLOROETHYLENE	ND
TRI-CL-F-METHANE	ND
VINYL CHLORIDE	ND
XYLENE	ND
ACETONE	ND
CARBON DISULFIDE	ND
2-BUTANONE (MEK)	ND
VINYL ACETATE	ND
HEXANONE	ND
METHYL-2-PENTANONE	ND
STYRENE	ND
CLP EXTRACTABLES	
METHOD NUMBER	8270
QUANTITATION LIMIT	0.33
2-CHLOROPHENOL	ND
2,4-DICHLOROPHENOL	ND
2,4-DIMETHYLPHENOL	ND
2,4-DINITROPHENOL	ND
2-NITROPHENOL	ND
4-NITROPHENOL	ND
P-CHLORO-M-CRESOL	ND
PENTACHLOROPHENOL	ND
PHENOL	ND
2,4,6-TRI CL PHENOL	ND
ACENAPHTHENE	ND
ACENAPHTHYLENE	ND

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
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SPECIMEN
BH-05 11.2-16.2'

SPECIMEN I.D. NUMBER
91814157

ACCESSION NO.
91 814157

28 0411

REFERRING CLIENT

DATE COLLECTED
10/10/91

TIME COLLECTED
00:00

RECEIVED
10/11/91

PUTNAM

4157

CLIENT LAB NO.
00000

REPORTED
10/24/91

TEST

RESULT

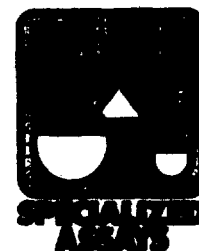
REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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SPECIMEN
BH-05 11.2-16.2'

SPECIMEN I.D. NUMBER
91814157

ACCESSION NO.
91 814157

REFERRING CLIENT

DATE COLLECTED
10/10/91

TIME COLLECTED
00:00

RECEIVED
10/11/91

PUTNAM

4157

CLIENT LAB NO.
00000

REPORTED
10/24/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
N-NIT-DINPROPYLAMINE ND
N-NIT-DIPHENYLAMINE ND
PHENANTHRENE ND
PYRENE ND
1,2,4-TRICHLOROBENZ ND
ANILINE ND
BENZYL ALCOHOL ND
4-CHLOROANILINE ND
DIBENZOFURAN ND
2-METHYLNAPHTHALENE ND
2-NITROANILINE ND
4-NITROANILINE ND
BENZOIC ACID ND
2-METHYLPHENOL ND
4-METHYLPHENOL ND
2,4,5-TRICHLORPHENOL ND
3-NITROANILINE ND
METHOD NUMBER ND
QUANTITATION LIMIT ND
METHOXYCHLOR ND
DRIN ND

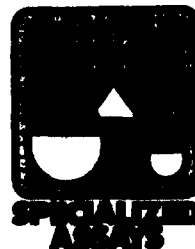
METHOD NUMBER 8080
QUANTITATION LIMIT 0.5

PPM

ALDRIN ND
ALPHA BHC ND
BETA BHC ND
GAMMA BHC ND
DELTA BHC ND
CHLORDANE ND
4,4'DDT ND
4,4'DDE ND
4,4'DDD ND
DIELDRIN ND
ALPHA ENDOSULFAN ND
BETA ENDOSULFAN ND
ENDOSULFAN SULFATE ND
ENDRIN ND
ENDRIN ALDEHYDE ND

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ATT. JOE PUTNAM
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SPECIMEN
BH-05 11.2-16.2'

SPECIMEN I.D. NUMBER
91814157

91 814157

REFERRING CLIENT

DATE COLLECTED
10/10/91

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TIME COLLECTED
00:00

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10/11/91

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10/24/91

TEST

RESULT

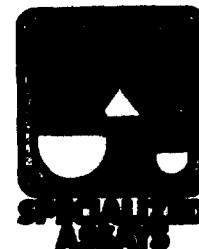
REFERENCE LIMITS

UNITS

HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND
PCB 1254	ND
PCB 1221	ND
PCB 1232	ND
PCB 1248	ND
PCB 1260	ND
PCB 1016	ND
TOXAPHENE	ND

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SB-06-S3

SPECIMEN

SPECIMEN I.D. NUMBER

ACCESSION NO.

91814238 2 8

041491 814238

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/11/91

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10/11/91

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4238

CLIENT LAB NO.
00000REPORTED
10/24/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	7.68	PPM
BARIUM	225	PPM
CADMIUM	3.08	PPM
CHROMIUM, TOTAL	55.1	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	161	PPM
SILVER	1.60	PPM
COPPER	133	PPM
NICKEL	28.7	PPM
ZINC	274	PPM
IRON	16402	PPM
MANGANESE	313	PPM
ALUMINUM	16224	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	39180	PPM
COBALT	14.5	PPM
MAGNESIUM	2186	PPM
POTASSIUM	1795	PPM
DIUM	252	PPM
THALLIUM	<1.0	PPM
VANADIUM	20.9	PPM
CYANIDE	<2.0	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.050	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

DRE TECHNOLOGIES, INC.
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SB-06-S3

SPECIMEN

SPECIMEN I.D. NUMBER

91814238

ACCESSION NO.

91 814238

REFERRING CLIENT

DATE COLLECTED

10/11/91

TIME COLLECTED

00:00

RECEIVED

10/11/91

PUTNAM

4238

CLIENT LAB NO.

00000

REPORTED

10/24/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
THYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

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SB-06-S3

SPECIMEN

SPECIMEN I.D. NUMBER

91814238 2 8

041791 814238

REFERRING CLIENT

DATE COLLECTED

10/11/91

TIME COLLECTED

00:00

RECEIVED

10/11/91

CLIENT LAB NO.

00000

REPORTED

10/24/91

PUTNAM

4238

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE ND
 N-NIT-DINPROPYLAMINE ND
 N-NIT-DIPHENYLAMINE ND
 PHENANTHRENE ND
 PYRENE ND
 1,2,4-TRICHLOROBENZ ND
 ANILINE ND
 BENZYL ALCOHOL ND
 4-CHLOROANILINE ND
 DIBENZOFURAN ND
 2-METHYLNAPHTHALENE ND
 2-NITROANILINE ND
 4-NITROANILINE ND
 BENZOIC ACID ND
 2-METHYLPHENOL ND
 4-METHYLPHENOL ND
 2,4,5-TRICHLORPHENOL ND
 3-NITROANILINE ND
 METHOD NUMBER 8080
 QUANTITATION LIMIT 0.5
 DIELDRIN ND
 ALPHA BHC ND
 BETA BHC ND
 GAMMA BHC ND
 DELTA BHC ND
 CHLORDANE ND
 4,4'DDT ND
 4,4'DDE ND
 4,4'DDD ND
 DIELDRIN ND
 ALPHA ENDOSULFAN ND
 BETA ENDOSULFAN ND
 ENDOSULFAN SULFATE ND
 ENDRIN ND
 ENDRIN ALDEHYDE ND
 HEPTACHLOR ND
 HEPTACHLOREPOXIDE ND
 METHOXYCHLOR ND
 PCB 1242 ND

8080
0.5

PPM

DRE TECHNOLOGIES, INC.
 ATT. JOE PUTNAM
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4437



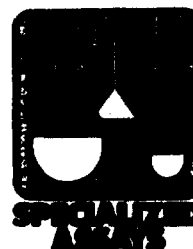
210 12th Ave., So. - Nashville, TN 37203
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SB-06-S3	SPECIMEN	SPECIMEN I.D. NUMBER	91814238	2 8	0418	ACCESSION NO.	91 814238
REFERRING CLIENT	DATE COLLECTED	10/11/91	TIME COLLECTED	00:00	RECEIVED	10/11/91	
PUTNAM	4238	CLIENT LAB NO.	00000	REPORTED	10/24/91		

TEST	RESULT	REFERENCE LIMITS	UNITS
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		

DRE TECHNOLOGIES, INC.
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SPECIMEN

SPECIMEN I.D. NUMBER

ACCESSION NO.

PTS B07-S1

91814467

91 814467

3-7-1
8-10' BLG

2 8 04 19

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/14/91

00:00

10/15/91

CLIENT LAB NO.

REPORTED

PUTNAM

4467

00000

10/28/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	2.98	PPM
BARIUM	152	PPM
CADMIUM	23.2	PPM
CHROMIUM, TOTAL	116	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	443	PPM
SILVER	5.72	PPM
COPPER	143	PPM
NICKEL	73.1	PPM
ZINC	594	PPM
IRON	11566	PPM
MANGANESE	320	PPM
ALUMINUM	6972	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	31880	PPM
COBALT	11.4	PPM
MAGNESIUM	2272	PPM
POTASSIUM	634	PPM
LIUM	196	PPM
THALLIUM	<1.0	PPM
VANADIUM	10.7	PPM
CYANIDE	11	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.62	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

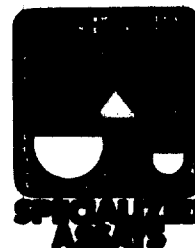
DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

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FRANKLIN TN 37064

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Phone 1-615-255-5786

SPECIMEN
PTS B07-S1

SPECIMEN I.D. NUMBER
91814467

ACCESSION NO.
91 814467

REFERRING CLIENT

DATE COLLECTED

10/14/91

TIME COLLECTED

00:00

RECEIVED

10/15/91

REPORTED

10/28/91

PUTNAM

4467

CLIENT LAB NO.

00000

TEST

RESULT

REFERENCE LIMITS

UNITS

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS(2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
2,3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	13
NITROBENZENE	ND

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
PTS B07-S1

SPECIMEN I.D. NUMBER
91814467

ACCESSION NO.
91 814467

REFERRING CLIENT

DATE COLLECTED
10/14/91

2 8 0421
TIME COLLECTED
00:00

RECEIVED
10/15/91

PUTNAM

4467

CLIENT LAB NO.
00000

REPORTED
10/28/91

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	2.4		PPM
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	13		PPM
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	15		PPM
ACETONE	<5.0		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	<5.0		PPM
VINYL ACETATE	<5.0		PPM
HEXANONE	<5.0		PPM
4-METHYL-2-PENTANONE	<5.0		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	8.2		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
PTS B07-S1
REFERRING CLIENT

SPECIMEN I.D. NUMBER
91814467 2 8 0422

ACCESSION NO.
91 814467

DATE COLLECTED
10/14/91

TIME COLLECTED
00:00

RECEIVED
10/15/91

PUTNAM

4467

CLIENT LAB NO.
00000

REPORTED
10/28/91

TEST

RESULT

REFERENCE LIMITS

UNITS

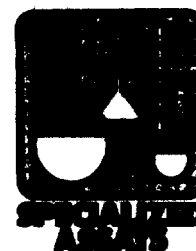
N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	20
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	0.5
ALDRIN	ND
HA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'ODT	ND
4,4'ODE	ND
4,4'ODD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND

PPM

PPM

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/14/91

00:00

10/15/91

PUTNAM

4467

CLIENT LAB NO.

00000

REPORTED

10/28/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	2.98	PPM
BARIUM	152	PPM
CADMIUM	23.2	PPM
CHROMIUM, TOTAL	116	PPM
SELENIUM	<1.0	PPM
MERCURY	<0.10	PPM
LEAD	443	PPM
SILVER	5.72	PPM
COPPER	143	PPM
NICKEL	73.1	PPM
ZINC	594	PPM
IRON	11566	PPM
MANGANESE	320	PPM
ALUMINUM	6972	PPM
ANTIMONY	<1.0	PPM
BERYLLIUM	<1.0	PPM
CALCIUM	31880	PPM
COBALT	11.4	PPM
MAGNESIUM	2272	PPM
POTASSIUM	634	PPM
LIUM	196	PPM
MALLIUM	<1.0	PPM
VANADIUM	10.7	PPM
CYANIDE	11	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.62	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CHLOROETHYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5788

SPECIMEN
PTS B07-S1

SPECIMEN I.D. NUMBER
91814467

ACCESSION NO.
91 814467

REFERRING CLIENT

DATE COLLECTED
10/14/91

TIME COLLECTED
00:00

RECEIVED
10/15/91

CLIENT LAB NO.
00000

REPORTED
10/28/91

PUTNAM

4467

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254	ND
PCB 1221	ND
PCB 1232	ND
PCB 1248	ND
PCB 1260	ND
PCB 1016	ND
TOXAPHENE	ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIALIZED ASSAYS

2 8 0425

REFERRING CLIENT

DRE Technologies, Inc
133 Holiday Ct. Suite 200
Franklin, Tennessee 37068
Attn: Joe Dutton



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)

PROJECT #

P.O. #

00037-PEL

1008-040

SAMPLERS (Signature)

Joe Dutton

PROJECT NAME

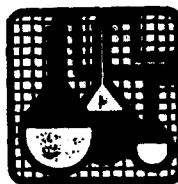
CAAD-BOREHOLE

FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT.	ANALYSES REQUESTED
	B-1-5 (50-1) (4.5-11.8')	10/2/91	1405		X	2	TAL, TAC
	B-1-9 (50-1) (13.0-20.0')	10/2/91	1520		X	2	TAL, TAC
	B-2-4 (50-1) (15.5-17.5')	10/3/91	1354		X	2	TAL, TAC
	B-2-6 (50-1) (17.5-21.5')	10/3/91	1350		X	2	TAL, TAC
	B-2-4 (50-1) (13.3-15.3')	10/4/91	1037		X	2	TAL, TAC
	B-3-7 (50-1) (17.5-19.5')	10/4/91	1035		X	2	TAL, TAC
	Tip Blw-K (2-4' from 1' hole)	10/4/91	1140		X	2	VECS

Relinquished by: (Signature) Joe Dutton	Date/Time 10/4/91	Received by: (Signature) [Signature]	Received for Laboratory by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Remarks	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		

SPECIALIZED ASSAYS

2 8 0426



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786

REFERRING CLIENT

SPE Technologies Inc
173 Holiday Court - Suite 200
Franklin Tennessee 37064
PHN: 512 PUTNAM

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)

PROJECT #

P.O. #

11177-DEL

11177-010

SAMPLERS (Signature)

Steve Schultz

PROJECT NAME

SAND SIE

FOR LAB USE ONLY
ACC #

SAMPLE DESCRIPTION

DATE

TIME

COM

GRAB

NO. OF

ANALYSES REQUESTED

B-4-4 (SC-1)
(13.8-15.8')

10-7-91

1207

X

2

TAL/TAC

Trip Blank

10-7-91

X

2

~~TAL/TAC~~ VOC'S

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Received for Laboratory by:
(Signature)

Date/Time

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Remarks

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

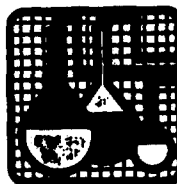
SPECIALIZED ASSAYS

2 8

0427

REFERRING CLIENT

JE Tech Inc
133 Holiday Ct. Suite 200
Franklin, Tennessee 37069
ATTN: Joe E. Putnam



210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5766

726-0177

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)

PROJECT #

P.O. #

00037 DEL

ACC-000

SAMPLERS (Signature)

Joe E. Putnam

PROJECT NAME

SHAD - BORINGS

FOR LAB USE ONLY
ACC #

SAMPLE DESCRIPTION

DATE

TIME

CO

GRAB

FOR

CO

ANALYSES REQUESTED

BH 05 Soil - 1
11.2 - 16.2 ft

10/10/91

1530

X

X

X

TAL/TAC.

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Received for Laboratory by: (Signature)

Date/Time

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Remarks

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

Relinquished by: (Signature)

Date/Time

Received by: (Signature)

2 sample jars = 1 sample

[illegible]

SPECIMEN
FRAC TANK LIQUID

SPECIMEN I.D. NUMBER
91814994 2 8 0430

ACCESSION NO.
91 814994

REFERRING CLIENT

DATE COLLECTED
10/22/91

TIME COLLECTED
00:00

RECEIVED
10/22/91

PUTNAM

4994

CLIENT LAB NO.
00000

REPORTED
11/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP TOTAL METALS

ARSENIC	0.007	PPM
BARIUM	0.075	PPM
CADMIUM	<0.001	PPM
CHROMIUM, TOTAL	0.007	PPM
SELENIUM	<0.005	PPM
MERCURY	<0.001	PPM
LEAD	0.037	PPM
SILVER	<0.005	PPM
COPPER	0.053	PPM
NICKEL	0.010	PPM
ZINC	0.071	PPM
IRON	2.10	PPM
MANGANESE	0.62	PPM
ALUMINUM	1.16	PPM
ANTIMONY	<0.010	PPM
BERYLLIUM	<0.005	PPM
CALCIUM	118	PPM
COBALT	<0.050	PPM
MAGNESIUM	10.5	PPM
POTASSIUM	4.29	PPM
LIUM	20.5	PPM
THALLIUM	<0.010	PPM
VANADIUM	<0.050	PPM
CYANIDE	0.31	PPM

CLP VOLATILES

METHOD NUMBER	8240	
QUANTITATION LIMIT	0.010	PPM
BENZENE	ND	
BROMOFORM	ND	
CARBON TETRACHLORIDE	ND	
CHLOROBENZENE	ND	
CHLORODIBROMETHANE	ND	
CHLOROETHANE	ND	
2-CLETHYVINYL ETHER	ND	
CHLOROFORM	ND	
DI-CL-BR-METHANE	ND	
1-1-DICHLOROETHANE	ND	
1,2-DICHLOROETHANE	ND	

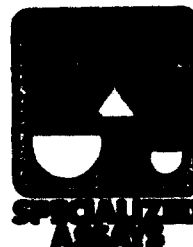
DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

JOE PUTNAM

HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5788

SPECIMEN
FRAC TANK LIQUID

SPECIMEN I.D. NUMBER
91814994 2 8

0431
ACCESSION NO.
91 814994

REFERRING CLIENT

DATE COLLECTED
10/22/91

TIME COLLECTED
00:00

RECEIVED
10/22/91

PUTNAM

4994

CLIENT LAB NO.
00000

REPORTED
11/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
1,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	ND		
1,2-DICHLOROETHYLENE	0.048		PPM
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		
ACETONE	<0.050		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	<0.050		PPM
VINYL ACETATE	<0.050		PPM
HEXANONE	<0.050		PPM
4-METHYL-2-PENTANONE	<0.050		PPM
STYRENE	ND		
CLP EXTRACTABLES			
METHOD NUMBER	8270		
QUANTITATION LIMIT	0.010		PPM
2-CHLOROPHENOL	ND		
2,4-DICHLOROPHENOL	ND		
2,4-DIMETHYLPHENOL	ND		
2,4-DINITROPHENOL	ND		
2-NITROPHENOL	ND		
4-NITROPHENOL	ND		
P-CHLORO-M-CRESOL	ND		
PENTACHLOROPHENOL	ND		
PHENOL	ND		
2,4,6-TRI CL PHENOL	ND		
ACENAPHTHENE	ND		
ACENAPHTHYLENE	ND		

DRE TECHNOLOGIES, INC.

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JOE PUTNAM

HOLIDAY COURT SUITE 200

FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
FRAC TANK LIQUID

REFERRING CLIENT

PUTNAM

TEST

ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GH)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
ETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND
ISOPHORONE	ND
NAPHTHALENE	ND
NITROBENZENE	ND

SPECIMEN I.D. NUMBER
91814994

2 8 0432

DATE COLLECTED
10/22/91

TIME COLLECTED
00:00

ACCESSION NO.
91 814994

RECEIVED
10/22/91

CLIENT LAB NO.
00000

REPORTED
11/01/91

RESULT

REFERENCE LIMITS

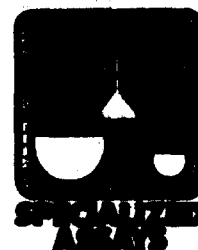
UNITS

DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

JOE PUTNAM
HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

FRAC TANK LIQUID

91814994 2 8

043391 814994

REFERRING CLIENT

DATE COLLECTED
10/22/91

TIME COLLECTED
00:00

RECEIVED
10/22/91

PUTNAM

4994

CLIENT LAB NO.
00000

REPORTED
11/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

N-NIT-DIMETHYLAMINE	ND
N-NIT-DINPROPYLAMINE	ND
N-NIT-DIPHENYLAMINE	ND
PHENANTHRENE	ND
PYRENE	ND
1,2,4-TRICHLOROBENZ	ND
ANILINE	ND
BENZYL ALCOHOL	ND
4-CHLOROANILINE	ND
DIBENZOFURAN	ND
2-METHYLNAPHTHALENE	ND
2-NITROANILINE	ND
4-NITROANILINE	ND
BENZOIC ACID	ND
2-METHYLPHENOL	ND
4-METHYLPHENOL	ND
2,4,5-TRICHLORPHENOL	ND
3-NITROANILINE	ND
METHOD NUMBER	8080
QUANTITATION LIMIT	<0.01
ORIN	ND
HA BHC	ND
BETA BHC	ND
GAMMA BHC	ND
DELTA BHC	ND
CHLORDANE	ND
4,4'DDT	ND
4,4'DDE	ND
4,4'DDD	ND
DIELDRIN	ND
ALPHA ENDOSULFAN	ND
BETA ENDOSULFAN	ND
ENDOSULFAN SULFATE	ND
ENDRIN	ND
ENDRIN ALDEHYDE	ND
HEPTACHLOR	ND
HEPTACHLOREPOXIDE	ND
METHOXYCHLOR	ND
PCB 1242	ND

PPM

DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

AT JOE PUTNAM

HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

SPECIMEN
FRAC TANK LIQUID

SPECIMEN I.D. NUMBER

91814994 2 8

0434

RECESSION NO.
91 814994

REFERRING CLIENT

E PUTNAM

DATE COLLECTED

10/22/91

TIME COLLECTED

00:00

RECEIVED

10/22/91

CLIENT LAB NO.

00000

REPORTED

11/01/91

TEST

RESULT

REFERENCE LIMITS

UNITS

PCB 1254
PCB 1221
PCB 1232
PCB 1248
PCB 1260
PCB 1016
TOXAPHENE

ND
ND
ND
ND
ND
ND
ND

DRE TECHNOLOGIES, INC.

Telephone: 000 790 5600

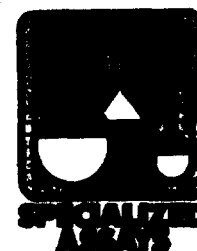
T. JOE PUTNAM

3 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

2 8 0 4 3 5

IRE Technologies, Inc
133 Holiday Ct. Ste 200
Franklin, TN 37064
Attn: IRE PUTNAM



**210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786**

Form 3035B Rev. 2/87

BILLING CONTROL NUMBER (FOR LAB USE ONLY)		PROJECT #	C0637- PFL	P.O.#	4108-01C		
SAMPLERS (Signature)	[Signature]	PROJECT NAME	SHAD SITE				
FOR LAB USE ONLY ACC #	SAMPLE DESCRIPTION	DATE	TIME	CONP.	GRAB	# OF CONT.	ANALYSES REQUESTED
	FAC TANK LIQUID	10/25/11	1050		X	7	TML/THC
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Received for Laboratory by:				Date/Time
[Signature]	10/25/11 1:00	[Signature]	(Signature)				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)					Remarks
Relinquished by: (Signature)	Date/Time	Received by: (Signature)					
Relinquished by: (Signature)	Date/Time	Received by: (Signature)					

ROT-01

91814715 2 8 0436 91 814715

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/16/91

00:00

10/17/91

JOE PUTNAM

4715

CLIENT LAB NO.

00000

REPORTED
10/30/91

TEST

RESULT

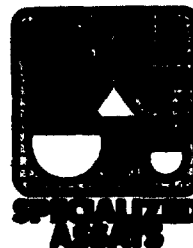
REFERENCE LIMITS

UNITS

2,4,6-TRI CL PHENOL	ND
ACENAPTHENE	ND
ACENAPHTHYLENE	ND
ANTHRACENE	ND
BENZEDINE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(GHI)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
BIS-2-CL-ETHOX METHA	ND
BIS(2-CL-ETHYL)ETHER	ND
BIS(2-CL-ISOPRO)ETHR	ND
BIS(2-ETH-HEX)PHTHAL	ND
4-BR-PHEN-PHEN-ETHER	ND
BUTYL-BENZ-PHTHALATE	ND
2-CHLORONAPHTHALENE	ND
4-CL-PHEN-PHEN-ETHER	ND
CHRYSENE	ND
DIBENZ(A,H)ANTHRACEN	ND
1,2-DICHLOROBENZENE	ND
1,3-DICHLOROBENZENE	ND
1,4-DICHLOROBENZENE	ND
3,3'-DICL BENZIDINE	ND
DIETHYL PHTHALATE	ND
DIMETHYL PHTHALATE	ND
BENZO(E)PYRENE	ND
DI-N-BUTYL PHTHALATE	ND
2,4-DINITROTOLUENE	ND
2,6-DINITROTOLUENE	ND
DI-N-OCTYL PHTHALATE	ND
1,2-DIPHEN-HYDRAZINE	ND
FLUORANTHENE	ND
FLUORENE	ND
HEXACHLOROBENZENE	ND
HEXACHLOROBUTADIENE	ND
HEXCLCYCLOPENTADIENE	ND
HEXACHLOROETHANE	ND
INDENO(1,2,3-CD)PYR	ND

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

ROT-01

91814715 2 8 043791 814715

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/16/91

00:00

10/17/91

E PUTNAM

CLIENT LAB NO.

REPORTED

4715

00000

10/30/91

TEST

RESULT

REFERENCE LIMITS

UNITS

ISOPHORONE ND
 NAPTHALENE ND
 NITROBENZENE ND
 N-NIT-DIMETHYLAMINE ND
 N-NIT-DINPROPYLAMINE ND
 N-NIT-DIPHENYLAMINE ND
 PHENANTHRENE ND
 PYRENE ND
 1,2,4-TRICHLOROBENZ ND
 ANILINE ND
 BENZYL ALCOHOL ND
 4-CHLOROANILINE ND
 DIBENZOFURAN ND
 2-METHYLNAPTHALENE ND
 2-NITROANILINE ND
 4-NITROANILINE ND
 BENZOIC ACID ND
 2-METHYLPHENOL ND
 4-METHYLPHENOL ND
 2,4,5-TRICHLORPHENOL ND
 3-NITROANILINE ND

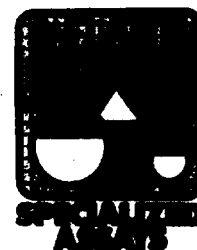
METHOD NUMBER 8080
 QUANTITATION LIMIT <0.01

PPM

ALDRIN ND
 ALPHA BHC ND
 BETA BHC ND
 GAMMA BHC ND
 DELTA BHC ND
 CHLORDANE ND
 4,4'DDT ND
 4,4'DDE ND
 4,4'DDD ND
 DIELDRIN ND
 ALPHA ENDOSULFAN ND
 BETA ENDOSULFAN ND
 ENDOSULFAN SULFATE ND
 ENDRIN ND
 ENDRIN ALDEHYDE ND
 HEPTACHLOR ND

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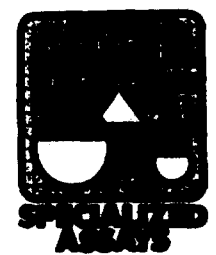
210 12th Ave., So. - Nashville, TN 37203
 Phone 1-615-255-5786

SPECIMEN		SPECIMEN I.D. NUMBER		RECESSION NO.	
ROT-01		918147152 8		0438 91 814715	
REFERRING CLIENT		DATE COLLECTED	TIME COLLECTED	RECEIVED	
E PUTNAM		10/16/91	00:00	10/17/91	
		4715	CLIENT LAB NO.	REPORTED	
			00000	10/30/91	

TEST	RESULT	REFERENCE LIMITS	UNITS
HEPTACHLOREPOXIDE	ND		
METHOXYCHLOR	ND		
PCB 1242	ND		
PCB 1254	ND		
PCB 1221	ND		
PCB 1232	ND		
PCB 1248	ND		
PCB 1260	ND		
PCB 1016	ND		
TOXAPHENE	ND		

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SPECIMEN
TRIP BLANK

SPECIMEN I.D. NUMBER
918144682 8

ACCESSION NO.
0439 91 814468

REFERRING CLIENT

DATE COLLECTED
10/14/91

TIME COLLECTED :
00:00

RECEIVED
10/15/91

E PUTNAM

4468

CLIENT LAB NO.
00000

REPORTED
10/28/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP VOLATILES

METHOD NUMBER 8240

QUANTITATION LIMIT 0.010

PPM

BENZENE ND

BROMOFORM ND

CARBON TETRACHLORIDE ND

CHLOROBENZENE ND

CHLORODIBROMETHANE ND

CHLOROETHANE ND

2-CLETHYVINYL ETHER ND

CHLOROFORM ND

DI-CL-BR-METHANE ND

1-1-DICHLOROETHANE ND

1,2-DICHLOROETHANE ND

1,1-DI-CL-ETHYLENE ND

1,2-DICHLOROPROPANE ND

1,3-DICHLOROPROPENE ND

ETHYLBENZENE ND

METHYL BROMIDE ND

METHYL CHLORIDE ND

METHYLENE CHLORIDE ND

,1,2,2 TET CL ETHAN ND

TETRACHLOROETHYLENE ND

TOLUENE ND

1,2-DICHLOROETHYLENE ND

1,1,1-TRI-CL-ETHANE ND

1,1,2-TRI-CL-ETHANE ND

TRICHLOROETHYLENE ND

TRI-CL-F-METHANE ND

VINYL CHLORIDE ND

XYLENE ND

ACETONE <0.050

PPM

CARBON DISULFIDE ND

2-BUTANONE (MEK) <0.050

PPM

VINYL ACETATE <0.050

PPM

2-HEXANONE <0.050

PPM

4-METHYL-2-PENTANONE <0.050

PPM

STYRENE ND

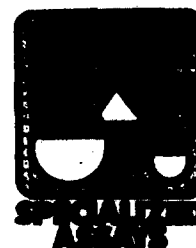
DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

TB-A

SPECIMEN

SPECIMEN ID. NUMBER

91814239

2 8

0440

RECESSION NO.

91 814239

REFERRING CLIENT

DATE COLLECTED

10/11/91

TIME COLLECTED

00:00

RECEIVED

10/11/91

JOE PUTNAM

4239

CLIENT LAB NO.

00000

REPORTED

10/24/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP VOLATILES

METHOD NUMBER

8240

QUANTITATION LIMIT

0.010

PPM

BENZENE

ND

BROMOFORM

ND

CARBON TETRACHLORIDE

ND

CHLOROBENZENE

ND

CHLORODIBROMETHANE

ND

CHLOROETHANE

ND

2-CLETHYLVINYL ETHER

ND

CHLOROFORM

ND

DI-CL-BR-METHANE

ND

1,1-DICHLOROETHANE

ND

1,2-DICHLOROETHANE

ND

1,1-DI-CL-ETHYLENE

ND

1,2-DICHLOROPROPANE

ND

1,3-DICHLOROPROPENE

ND

ETHYLBENZENE

ND

METHYL BROMIDE

ND

METHYL CHLORIDE

ND

METHYLENE CHLORIDE

ND

1,1,2,2-TET-CL-ETHAN

ND

TETRACHLOROETHYLENE

ND

TOLUENE

ND

1,2-DICHLOROETHYLENE

ND

1,1,1-TRI-CL-ETHANE

ND

1,1,2-TRI-CL-ETHANE

ND

TRICHLOROETHYLENE

ND

TRI-CL-F-METHANE

ND

VINYL CHLORIDE

ND

XYLENE

ND

ACETONE

ND

CARBON DISULFIDE

ND

2-BUTANONE (MEK)

ND

VINYL ACETATE

ND

2-HEXANONE

ND

4-METHYL-2-PENTANONE

ND

STYRENE

ND

DRE TECHNOLOGIES, INC.

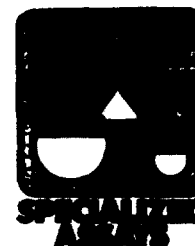
ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203

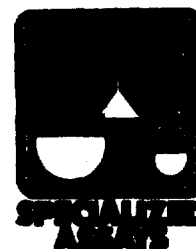
Phone 1-615-255-5786

SPECIMEN		SPECIMEN I.D. NUMBER		ACCESSION NO.
TB-B		91814240	2 8	0441 91 814240
REFERRING CLIENT		DATE COLLECTED	TIME COLLECTED	RECEIVED
		10/11/91	00:00	10/11/91
E PUTNAM	4240	CLIENT LAB NO.	00000	REPORTED
				10/24/91

TEST	RESULT	REFERENCE LIMITS	UNITS
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	ND		
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		
ACETONE	ND		
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	ND		
VINYL ACETATE	ND		
2-HEXANONE	ND		
4-METHYL-2-PENTANONE	ND		
STYRENE	ND		

DRE TECHNOLOGIES, INC.
 ATT. JOE PUTNAM
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SPECIMEN
TRIP BLANK X (R07-01)

SPECIMEN I.D. NUMBER
91814716 2 8 0442 91 814716

REFERRING CLIENT

DATE COLLECTED

10/16/91

TIME COLLECTED

00:00

RECEIVED
10/17/91

E PUTNAM

4716

CLIENT LAB NO.
00000

REPORTED
10/29/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.010		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		
DI-CL-BR-METHANE	ND		
1-1-DICHLOROETHANE	ND		
1,2-DICHLOROETHANE	ND		
1,1-DI-CL-ETHYLENE	ND		
1,2-DICHLOROPROPANE	ND		
1,3-DICHLOROPROPENE	ND		
ETHYLBENZENE	ND		
METHYL BROMIDE	ND		
METHYL CHLORIDE	ND		
METHYLENE CHLORIDE	ND		
,1,2,2 TET CL ETHAN	ND		
TETRACHLOROETHYLENE	ND		
TOLUENE	ND		
1,2-DICHLOROETHYLENE	ND		
1,1,1-TRI-CL-ETHANE	ND		
1,1,2-TRI-CL-ETHANE	ND		
TRICHLOROETHYLENE	ND		
TRI-CL-F-METHANE	ND		
VINYL CHLORIDE	ND		
XYLENE	ND		
ACETONE	<0.050		PPM
CARBON DISULFIDE	ND		
2-BUTANONE (MEK)	<0.050		PPM
VINYL ACETATE	<0.050		PPM
2-HEXANONE	<0.050		PPM
4-METHYL-2-PENTANONE	<0.050		PPM
STYRENE	ND		

DRE TECHNOLOGIES, INC.
ATT. JOE PUTNAM
133 HOLIDAY COURT SUITE 200
FRANKLIN TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
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SPECIMEN
TRIP BLANK sent w/sample 8-44

SPECIMEN I.D. NUMBER

91813736

2 8

0443

ACCESSION NO.

91 813736

REFERRING CLIENT

DATE COLLECTED

10/07/91

TIME COLLECTED

00:00

RECEIVED

10/07/91

REPORTED

10/10/91

CLIENT LAB NO.

00000

JOE PUTNAM

3736

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP VOLATILES

METHOD NUMBER

8240

QUANTITATION LIMIT

0.010

PPM

BENZENE

ND

BROMOFORM

ND

CARBON TETRACHLORIDE

ND

CHLOROBENZENE

ND

CHLORODIBROMETHANE

ND

CHLOROETHANE

ND

2-CLETHYVINYL ETHER

ND

CHLOROFORM

ND

DI-CL-BR-METHANE

ND

1-1-DICHLOROETHANE

ND

1,2-DICHLOROETHANE

ND

1,1-DI-CL-ETHYLENE

ND

1,2-DICHLOROPROPANE

ND

1,3-DICHLOROPROPENE

ND

ETHYLBENZENE

ND

METHYL BROMIDE

ND

METHYL CHLORIDE

ND

METHYLENE CHLORIDE

ND

1,1,2,2 TET CL ETHAN

ND

TETRACHLOROETHYLENE

ND

TOLUENE

ND

1,2-DICHLOROETHYLENE

ND

1,1,1-TRI-CL-ETHANE

ND

1,1,2-TRI-CL-ETHANE

ND

TRICHLOROETHYLENE

ND

TRI-CL-F-METHANE

ND

VINYL CHLORIDE

ND

XYLENE

ND

ACETONE

ND

CARBON DISULFIDE

ND

2-BUTANONE (MEK)

ND

VINYL ACETATE

ND

2-HEXANONE

ND

4-METHYL-2-PENTANONE

ND

STYRENE

ND

DRE TECHNOLOGIES, INC.

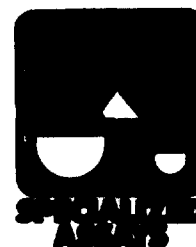
ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

TRIP BLANK SPECIMEN
*sent w/ samples: 8-1-5, 8-1-9
8-2-4, 8-2-6, 8-2-7, 8-3-7*

SPECIMEN I.D. NUMBER
91813560 2 8 0444

ACCESSION NO.
91 813560

REFERRING CLIENT

DATE COLLECTED
10/04/91

TIME COLLECTED
00:00

RECEIVED
10/04/91

JOE PUTNAM

3560

CLIENT LAB NO.
00000

REPORTED
10/09/91

TEST

RESULT

REFERENCE LIMITS

UNITS

CLP VOLATILES

METHOD NUMBER

8240

QUANTITATION LIMIT

0.010

PPM

BENZENE

ND

BROMOFORM

ND

CARBON TETRACHLORIDE

ND

CHLOROBENZENE

ND

CHLORODIBROMETHANE

ND

CHLOROETHANE

ND

2-CLETHYVINYL ETHER

ND

CHLOROFORM

ND

DI-CL-BR-METHANE

ND

1-1-DICHLOROETHANE

ND

1,2-DICHLOROETHANE

ND

1,1-DI-CL-ETHYLENE

ND

1,2-DICHLOROPROPANE

ND

1,3-DICHLOROPROPENE

ND

ETHYLBENZENE

ND

METHYL BROMIDE

ND

METHYL CHLORIDE

ND

METHYLENE CHLORIDE

ND

1,1,2,2 TET CL ETHAN

ND

TETRACHLOROETHYLENE

ND

TOLUENE

ND

1,2-DICHLOROETHYLENE

ND

1,1,1-TRI-CL-ETHANE

ND

1,1,2-TRI-CL-ETHANE

ND

TRICHLOROETHYLENE

ND

TRI-CL-F-METHANE

ND

VINYL CHLORIDE

ND

XYLENE

ND

ACETONE

ND

CARBON DISULFIDE

ND

2-BUTANONE (MEK)

ND

VINYL ACETATE

ND

2-HEXANONE

ND

4-METHYL-2-PENTANONE

ND

STYRENE

ND

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

133 HOLIDAY COURT SUITE 200

FRANKLIN

TN 37064

4437



210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5786

2 8 0445

RF Technologies, Inc
33 Holiday Ct, Ste 206
Franklin, TN 37064
Attn: Joe Putnam



**210 12th Ave., South
P.O. Box 25110
Nashville, TN 37202
1-615-255-5786**

Form 3035B Rev. 2/87

[illegible]

ROT-01

(2114 DEF 777100)

918147152 8

0446 91 814715

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/16/91

00:00

10/17/91

JOE PUTNAM

4715

CLIENT LAB NO.

00000

REPORTED

10/30/91

TEST

RESULT

REFERENCE LIMITS

UNITS

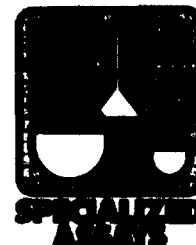
TRPH GC WATER			
LOW BOILING COMPONENT	<0.05		PPM
HIGH BOILING COMPONENT	7797		PPM
CLP TOTAL METALS			
ARSENIC	0.027		PPM
BARIUM	0.94		PPM
CADMIUM	0.48		PPM
CHROMIUM, TOTAL	1.99		PPM
SELENIUM	<0.005		PPM
MERCURY	<0.001		PPM
LEAD	5.59		PPM
SILVER	0.11		PPM
COPPER	2.64		PPM
NICKEL	1.32		PPM
ZINC	10.1		PPM
IRON	54.1		PPM
MANGANESE	4.40		PPM
ALUMINUM	32.9		PPM
ANTIMONY	<0.010		PPM
BERYLLIUM	0.005		PPM
CALCIUM	254		PPM
COBALT	0.061		PPM
MAGNESIUM	19.3		PPM
POTASSIUM	18.4		PPM
SODIUM	20.6		PPM
THALLIUM	<0.010		PPM
VANADIUM	0.067		PPM
CYANIDE	0.53		PPM
CLP VOLATILES			
METHOD NUMBER	8240		
QUANTITATION LIMIT	0.10		PPM
BENZENE	ND		
BROMOFORM	ND		
CARBON TETRACHLORIDE	ND		
CHLOROBENZENE	ND		
CHLORODIBROMETHANE	ND		
CHLOROETHANE	ND		
2-CLETHYVINYL ETHER	ND		
CHLOROFORM	ND		

DRE TECHNOLOGIES, INC.

ATT. JOE PUTNAM

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FRANKLIN TN 37064

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Phone 1-615-255-5786

ROT-01

91814715

2 8

0447

91 814715

REFERRING CLIENT

DATE COLLECTED

TIME COLLECTED

RECEIVED

10/16/91

00:00

10/17/91

JOE PUTNAM

CLIENT LAB NO.

REPORTED

4715

00000

10/30/91

TEST

RESULT

REFERENCE LIMITS

UNITS

DI-CL-BR-METHANE ND

1-1-DICHLOROETHANE ND

1,2-DICHLOROETHANE ND

1,1-DI-CL-ETHYLENE ND

1,2-DICHLOROPROPANE ND

1,3-DICHLOROPROPENE ND

ETHYLBENZENE ND

METHYL BROMIDE ND

METHYL CHLORIDE ND

METHYLENE CHLORIDE ND

1,1,2,2 TET CL ETHAN ND

TETRACHLOROETHYLENE ND

TOLUENE 0.57 PPM

1,2-DICHLOROETHYLENE 3.6 PPM

1,1,1-TRI-CL-ETHANE ND

1,1,2-TRI-CL-ETHANE ND

TRICHLOROETHYLENE ND

TRI-CL-F-METHANE ND

VINYL CHLORIDE ND

XYLENE 0.20 PPM

ACETONE <0.5 PPM

CARBON DISULFIDE ND

2-BUTANONE (MEK) <0.5 PPM

VINYL ACETATE <0.5 PPM

2-HEXANONE <0.5 PPM

4-METHYL-2-PENTANONE <0.5 PPM

STYRENE ND

CLP EXTRACTABLES

METHOD NUMBER 8270

QUANTITATION LIMIT 0.25 PPM

2-CHLOROPHENOL ND

2,4-DICHLOROPHENOL ND

2,4-DIMETHYLPHENOL ND

2,4-DINITROPHENOL ND

2-NITROPHENOL ND

4-NITROPHENOL ND

P-CHLORO-M-CRESOL ND

PENTACHLOROPHENOL ND

PHENOL ND

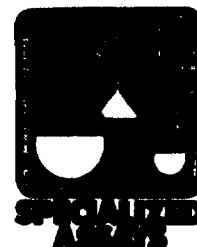
DRE TECHNOLOGIES, INC.

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FRANKLIN TN 37064

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210 12th Ave., So. - Nashville, TN 37203
Phone 1-615-255-5788

2 8 0448

APPENDIX H
RESPONSE ACTION ALTERNATIVE
COST ESTIMATES

**SAAD TROUSDALE DRIVE SITE
RA/FI COST ESTIMATE
IN-SITU VAPOR EXTRACTION**

CAPITAL ITEMS	ESTIMATED COST (\$)
Dual Vacuum Well Installation	65,000
Vacuum Pumps and Piping System	27,000
Air Emissions Control (vapor phase carbon or catalytic oxidation)	75,000
Pre-engineered Building (20' x 30' @ \$40/sq. ft.)	24,000
Start-up Operations	45,000
Operational Costs	225,000
Post Treatment Confirmation Sampling and Report	50,000
Treatment Area Cover (est. 18,000 sq. ft. @ \$10/sq. ft.)	180,000
Subtotal	691,000
Administration and Engineering @ 15%	103,650
Subtotal	794,650
Contingency @ 25%	198,660
TOTAL CAPITAL COST	993,312
ROUNDED TO	995,000

Notes: Operation period less than 2 years.

Maintenance for this period included in operation costs.

Assumes treatment of maximum 13,000 cubic yards.

**SAAD TROUSDALE DRIVE SITE
RA/FI COST ESTIMATE
IN-SITU BIOREMEDIATION**

CAPITAL ITEMS	ESTIMATED COST (\$)
Mobilization/Site Preparation	40,000
Installation of Subsurface Injection/Application System	65,000
Biological Media Application/Operations	110,000
Treatment Monitoring	24,000
Post Treatment Confirmation Sampling and Report	50,000
Subtotal	289,000
Administration and Engineering @ 10%	28,900
Subtotal	317,900
Contingency @ 25%	79,475
TOTAL ESTIMATED COST	397,375
ROUNDED TO	400,000

Notes: Application area of 15,000 sq. ft.
Operation period less than 2 years.
Maintenance included in operation costs.

**SAAD TROUSDALE DRIVE SITE
RA/FI COST ESTIMATE
THERMAL DESORPTION**

	Quantity	Unit	Unit Rate (\$)	Capital Cost (\$)
I. General Actions/Site Preparation				
Erosion Control	1000	LF	3.00	3,000
Staging Area Development	300	SY	10.00	3,000
Decontamination Area Development	300	SY	10.00	3,000
Decontamination Facilities	1	LS	LS	50,000
Stockpile/Feed Pad	300	SY	10.00	3,000
Equipment Mob/Demob	1	LS	LS	40,000
Subtotal				102,000
II. Thermal Treatment				
Treatment Unit Mob/Erection/Demob	1	LS	LS	250,000
Soils Excavation and Stockpiling	13,000	CY	9.00	117,000
Debris Segregation and Decon (Feed pretreatment)	8,000	TONS	10.00	80,000
Thermal Treatment of Solids	14,000	TONS	75.00	1,050,000
Lab and Air Monitoring	1	LS	LS	125,000
Health and Safety	1	LS	LS	100,000
Permitting/Testing	1	LS	LS	200,000
Subtotal				1,922,000
III. Residuals Handling and Site Closure				
Sampling/Analysis	1	LS	LS	70,000
Backfill Excavation/Placement	13,000	CY	7.50	97,500
Top Soil Placement	650	CY	10.00	6,500
Revegetation	0.4	ACRE	2,000	800
Treated Soil Stabilization (if necessary)	8,600	CY	60	516,000
Subtotal				690,800
Cost Estimate Subtotal				2,714,800
Administration and Engineering @ 15%				407,220
Subtotal				3,122,020
Contingency @ 25%				780,505
TOTAL ESTIMATED COST				3,902,525
ROUNDED TO				3,900,000

Notes: 13,000 cubic yards, 30% Limestone Boulders and Fill w/s.g. ≈ 2.2 , soils s.g. ≈ 1.62
does not include any off-site disposal requirements for debris or stabilized solids
stabilization of treated soils may not be necessary, estimated as worst case
does not include any activities associated with maintaining structural stability of adjoining buildings

28 0451

**SAAD TROUSDALE DRIVE SITE
RA/FI COST ESTIMATE
OFF-SITE DISPOSAL
HAZARDOUS/SECURE LANDFILL W/O PRETREATMENT**

	Quantity	Unit	Unit Rate (\$)	Capital Cost (\$)
I. General Actions/Site Preparation				
Erosion Control	1000	LF	3.00	3,000
Staging Area Development	300	SY	10.00	3,000
Decontamination Area Development	300	SY	10.00	3,000
Equipment Mob/Demob	1	LS	LS	40,000
Decontamination Facilities	1	LS	LS	50,000
Stockpile Pad	300	SY	10.00	3,000
Subtotal				102,000
II. Contaminated Solids Handling				
Soil Excavation and Handling	13,000	CY	10.00	130,000
Debris Segregation and Decon	8,000	TONS	10.00	80,000
Truck Loading	13,000	CY	2.75	35,750
Transportation	8,600	CY	70	602,000
Disposal	8,600	CY	240	2,064,000
Sampling/Analysis	1	LS	LS	70,000
Subtotal				2,981,750
III. Site Closure				
Backfill with Clean Fill	13,000	CY	10.00	130,000
Backfill with Top Soil	650	CY	10.00	6,500
Revegetate	0.4	ACRE	2,000	800
Subtotal				137,300
Cost Estimate Subtotal				3,221,050
Administration and Engineering @ 5%				161,053
Subtotal				3,382,053
Contingency @ 20%				676,421
TOTAL ESTIMATED COST				4,058,524
ROUNDED TO				4,000,000

Notes: Assumes decontaminated boulders, etc. can be replaced on-site.
Does not include any activity associated with maintaining structural stability of adjoining buildings.

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**SAAD TROUSDALE DRIVE SITE
RA/FI COST ESTIMATE
OFF-SITE DISPOSAL
HAZARDOUS W/PRETREATMENT**

	Quantity	Unit	Unit Rate (\$)	Capital Cost (\$)
I. General Actions/Site Preparation				
Erosion Control	1000	LF	3.00	3,000
Staging Area Development	300	SY	10.00	3,000
Decontamination Area Development	300	SY	10.00	3,000
Equipment Mob/Demob	1	LS	LS	40,000
Decontamination Facilities	1	LS	LS	50,000
Stockpile Pad	300	SY	10.00	3,000
Subtotal				102,000
II. Contaminated Solids Handling				
Soil Excavation and Handling	13,000	CY	10.00	130,000
Debris Segregation and Decon	8,000	TONS	10.00	80,000
Truck Loading	13,000	CY	2.75	35,750
Transportation	8,600	CY	70	602,000
Disposal	8,600	CY	240	2,064,000
Sampling/Analysis	1	LS	LS	100,000
Pretreatment (thermal w/stabilization)	14,000	TONS	1,200	16,800,000
Subtotal				19,813,750
III. Site Closure				
Backfill with Clean Fill	13,000	CY	10.00	130,000
Backfill with Top Soil	650	CY	10.00	6,500
Revegetate	0.4	ACRE	2,000	800
Subtotal				137,300
Cost Estimate Subtotal				20,053,050
Administration and Engineering @ 5%				1,002,653
Subtotal				21,055,703
Contingency @ 20%				4,211,141
TOTAL ESTIMATED COST				25,266,844
ROUNDED TO				25,300,000

Notes: Assumes decontaminated boulders, etc. can be replaced on-site.
Does not include any activity associated with maintaining structural stability of adjoining buildings.

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